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The Glands of Internal Secretion*

The Climacterium in Males

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The ebb of sexual activity and a critical period of life is common to man as well as woman. As early as 1728, Sanctorius mentioned the climacterium virile.

At about the menopause age in women, man also shows mental and physical symptoms as in the case of woman, excepting, of course, phenomena relating to the menstrual flow; and in man the new condition is less conspicuous.

Spermatozoa appear in the seminal fluid at the age of fifteen or sixteen years, but the moment when they cease to be produced cannot be determined precisely. This is the principal reason why the existence of the critical period of man has not been universally recognized. Moreover, the continuance of the secretion of seminal fluid during old age has diverted attention from this subject.

But facts prove that the secretion of semen diminishes greatly in quantity as well as in its fecundating power, at about the age of sixty. Exceptions are on record of men whose procreative power was prolonged to the age of ninety or a hundred, but as a general rule, the begetting of children, after sixty, or sixty-five is exceptional. Nature is only interested in the perpetuation of the species and for this purpose requires healthy, vigorous individuals and not persons whose bodies are in a state of decline.

De Sere has assured himself by extensive evidence received from men who married between fifty and sixty, and whose disappointment in not having children had led them to submit their semen to a careful examination, that the latter presented very appreciable changes. The characteristic odor, peculiar to the seminal fluid and due to the admixture of the prostatic secretion, is less marked; its viscidity, due to the secretion of Cowper's glands, is diminished; its whiteness and opacity are gradually lessened until it assumes a greyish tint; the coagulation of the seminal fluid which occurs spontaneously after emission, is not so marked, and often is entirely absent in aged men.

There are other pathological changes which have been termed "climacteric diseases." Paul asserts that prostatic enlargement in advanced life is the result of an involution change comparable with involution hypertrophy of the breast in the female at the climacteric period. The writer referred to this in an address before the West Side Clinical Society of New York, December 10th, 1925, entitled "New Theory of the Function of the Prostate Deduced from Gland Transplantation in Physicians," published in "Endocrinology," December, 1925.

Researches have led investigators to believe that all activities of the body—muscular, glandular and visceral—are controlled and regulated by the nervous system. Furthermore, it has been assumed that the ductless glands and their internal secretions play an important part in sustaining the equilibrium of metabolism. The ductless glands have been divided into two groups, namely, first the "accelerator" group, and second, the "inhibitory" group. To the first group belong the suprarenals,* or adrenals, and the thyroid gland. These increase protein metabolism. To the "inhibitory" group belong the pancreas and the parathyroids. Both retard protein metabolism.

The gonads also have an internal secretion which acts upon the metabolism to stimulate it in each sex in a specific manner.

According to many leading research workers, the climacteric changes in the organism of man are practically

* This is the fifth article of this series.

dependent upon changes of the internal secretion of the interstitial cells of the testicle. In climacteric men, impotency is generally manifest, though the libido may persist. The testes have lost their power, life has crossed its summit, and the organism is on the downward path.

The writer does not agree in any particular with this opinion. There has been too much confusion in speaking of the sex life of man. It is invariably referred to in a general way to include under one heading various phases, namely, sex desire, potency and virility. Until each of these conditions are taken up as individual entities, we will remain in the muddle we have been in for generations. Each one of these conditions may be present or absent without marked relationship to each other. A man may have marked sex desire and may be impotent and sterile. A man may be potent with six desire diminished or absent, and virility present or absent. A man may be virile and yet be without either sex desire or potency.

A case quoted by the author in a previous paper was that of a bank president, who, until he lost his prostate, was potent, and normal in sex desire. Another case quoted in a previous paper in this series was that of a young man, who at the age of sixteen was castracted, yet he was able to have an erection, have intercourse, and informed me that he had sex desire. There are many such cases reported by other authors.

We also know that there are cases where the testicles and the prostate are normal, but the posterior portion of the pituitary gland becomes involved pathologically and an impotence develops.

We know also that in association with many other pathological conditions, impotency may develop, loss of sex desire may develop, loss of virility may develop, yet the testes and prostate may be anatomically unaltered.

Acute as well as chronic diseases during the climacterium are attended with more than the usual dangers, the powers of resistance being less competent to battle with the infective or toxic invasion.

Certain climacteric diseases stand out on account of their frequency. Arteriosclerosis is to be regarded as physiologic in a man past sixty, though there are certain factors which hasten its development, such as syphilis, infectious diseases, rheumatism and gout.

According to Thewlis, the term cerebral arterio-sclerosis is used to cover a mass of ignorance in diagnosis. There are many cases with what seem to be symptoms of cerebral arterio-sclerosis, which are really due to uremia or intestinal totxemia. Arterio-sclerosis in persons of advanced age is frequently associated with headache, dizziness, loss of appetite, furred tongue and blurred vision.

Aortic arterio-sclerosis is the most frequent of the arterial degenerations occurring during the climacteric.

Just what relation arterio-sclerosis has to the endocrine glands we do not know. In the series of four hundred cases of transplantation which the writer has performed, there have been a number of cases of arterio-sclerosis associated with high blood-pressure. One of these cases which stands out in the author's mind is that of a maiden lady, age seventy-four, in whom ovarian gonadal tissue was transplanted November 11th, 1924. At the time of transplantation her blood-pressure was 220, and on November 18th, 1914, seven days following the transplantation, the blood-pressure was down to 160.

In another case, awidow, age sixty, the blood-pressure was 240. Ovarian gonadal tissue was transplanted on April 28th, 1924. On May 14th, 1924, a little over two weeks following the transplantation, the blood-pressure dropped to 170, where it remained for a period of six months and then again started to rise, probably due to the fact that the transplanted tissue was beginning to become absorbed.

In Stanley's series of hypodermic implantations, this alteration of blood-pressure was one of the outstanding results. Voronoff also noted this constant result from his operation.

The earliest cardiac change at this time is a cardiac hypertrophy, which is to be expected in consideration of the general interstitial changes which go on in other organs. The chronic endocarditis which is frequently seen in the male climacterium is simply part of the arterio-sclerosis of this period.

While the anatomical changes of the stomach, due to the process of ageing, are marked, the functional impairment is slight, the demands on the organ being less.

Among other so called "preferential" diseases is cancer, which, according to Cohnheim's theory, arises from faulty embryonic development, embryonic cells remaining dormant until later life.

The frequency of cancer at this time would strongly suggest an endocrine basis for these abnormal cells, or, at least, the malignant cells receive a nourishment from the abnormal chemicals which are floating in the blood stream at this period.

We know that graftitng of cancer cells is not successful in young rodents, but cancer grows with avidity if cells are grafted from one ageing rat to another. We know also that in gonadal transplantation experiments on rodents, organs which appeared shrivelled and aged take on the appearance of youth and health within several weeks of said transplantation.

Cachexia, described by Grawitz as a "fatal cachexia without discernible anatomical cause," results in rapid anemia, emaciation, loss of strength and general physical breakdown.

Chronic hypertrophic bronchial catarrh is the most frequent bronchial effection of this period.

All the climacteric diseases, whatever their nature, are the manifest symptoms of the failure of some governing power regulating the organic processes, and are, as far as our present knowledge goes, connected with the dysfunction of the glands of internal secretion.

There are those who are opposed to the belief that this governing power lies in the glands of internal secretion, and claim that the glands are only equal sufferers from age, and that the other body tissues and organs would endure the same changes, regardless of the condition of the glands. To those objectors, the writer would call attention to the fact that all of the physiological changes spoken of above can be artificially produced at a much earlier age by the removal of the glands, and that the changes spoken of, when produced artificially, are usually much more aggravated.

Many of the organic disturbances occurring during the climacterium virile are to be regarded as physiological processes, which, under certain circumstances, become pathologic. Many authorities ascribe a deeper significance and greater seriousness to physical deteriorations incident to the male climacterium than to those observed during the menopause, because the death-rate of man is in such an extraordinary excess over that of woman at the menopausal period.

More serious than the physical changes are the mental disorders manifesting themselves during and after the male climacteric.

One of the most characteristic evidences of advancing age is the loss of precise memory for recent events. From a medico-legal standpoint, however, attention should be called to the fact that a man's memory may be extremely bad, and yet his capacity for making a will may be quite good.

Another matter connected with mental deterioration is loss of self-control, which often leads to hysterical and

emotional conditions. Many climateric men manifest a profound neurasthenia which is closely connected with the change of life. Quite frequently an anxiety neurosis dominates the clinical picture, and incapability to concentrate, hypochondriasis and suicidal impulses are not unusual. There may be introspection, with natural fears and unnatural; plobias.

As a rule the libido, and also potency, decreases, though sometimes there may be a considerably increased libidio. Climacteric men often complain of disturbances during coitus, such as orgasm without ejaculation, ejaculation without orgasm, ejaculatio praecox, or ejaculatic deficiens.

The most distressing manifestation of the climacterium virile are deviations from the normal vita sexualis. It has been observed that the frequency of sexual perversions is greater after puberty than before, and that the frequency increases with advancing years. The time at which the imagination unfolds its greatest activity, the commencement of manhood, is extremely favorable to the origination of sexual aberrations, and to their becoming habitual practices; and, again, during the climacterium, the age at which the sexul powers begin to decline, and when for their incitation new stimuli are needed, is one at which abnormal varieties of sexual gratification frequently originate.

Thus, we note in climacteric men libidinous feelings for little girls (corophilia), young boys (pedophilia), incest fantasies, and homosexuality (tardive homosexuality).

The frequency with which climacteric men plunge into sexual debauchery and commit erotic follies challenges us to search for an underlying physical cause for such conduct.

Lydston advances the theory of a perversion in the quality and quantity of the endocrine secretions, and that the point of departure is to be found in the testicular cells of Ledig, with an aberration of the sex-hormone. The vicious circle once established, all of the endocrine secretions play their part.

In connection with implantation of gonadal tissue at this period of life, which seems to the author, from his experience, to be the most logical treatment for the depressed physiology incident to the climacterium, he would like to be thoroughly understood regarding his viewpoint in relation to transplanted tissue. It is not the author's belief or contention that transplanted gonadal tissue is a true transplantation in the sense of skin grafting, but is a transplantation of tissue which is going to be absorbed in a short period of time. It may last six months to a year or a little longer, depending on the condition of the patient, and in some cases will have to be repeated if the good results are to persist.

The author looks on transplantation as he looks on any other medication. When gonadal tissue is transplanted, the operator transplants gonadal titssue, composed of thousands of endocrine-producing cells, endocrines which are deficient, especially at the climacteric period of life. During the absorption of this tissue, these endocrines are also absorbed, and supply the body with that which is most vital and necessary to prevent the depredations that the patient is undergoing from their deficiency.

412 West End Ave.

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Ossification of the Hyoid Apparatus

The development of radiography has transferred several abnormal bony conditions from the note-book of the anatomist to the hands of the surgeon. First described as an anatomical peculiarity by Geoffroy-St. Hilaire in 1818, ossification of the stylohyoid ligaments has been studied as a clinical problem by von Eicken and Olivier. Dr. Adrien Harburger has recently said all there is at present to say about this interesting subject, basing his observations on 49 cases.

The symptom-complex produced by this abnormal slip of bone in the throat is a vicious circle of painful dysphagia and reflex increased salvation calling for repeated deglutition. The typical case is a woman of about 30 who has consulted many physicans, without avail, for an increasing difficulty in swallowing. She has noticed the steady development of a sharp pain in the throat, usually on the left side, aggravated by the passage of any food, especially solids. She has a scraping sensation in the pharynx, which feels as if a sharp point were piercing it at a spot which she can localize accurately. Sometimes the pain passes up to the ear and causes a little deafness. She may come into the consulting room dribbling the excessive saliva which dread of pain forbids her to swallow. When she speaks a certain mechanicals dysphonia may be observed on the high notes. She will probably be able to point out a reddened andd tender rod of bone across the tonsil or one of its pillars, or a ridge in the back of the mouth or nasopharynx. The progress of the case is slow but steadily progressive, until the pain necessitates resection of the styloid process, which is invariably successful. As in the parallel condition of cervical rib, the ossification may be present without causing symptoms.

Out of 115 cases collected by Dr. Harburger, only 20 gave trouble, and the malformation was discovered by chance on removing a tonsil or on making a thorough examination for some other reason. He lays stress on the necessity for palpating the ossicle before making the diagnosis; to see the ridge is not enough. The anterior pillar, the tonsillar fossa, the posterior pillar, and the lateral wall of the pharynx should be palpated methodically from above downwards, and the size, direction, and transverse mobility of the bone carefully estimated. There is no problem of differential diagnosis when an *x*-ray has been taken; this should be done in profile with the head extended and the beam centered on the angle of the jaw. Unless this is done there may be confusion with cases of cartilaginous nodules or calculi in the tonsil—found in 34 per cent of normal cases, according to Dr. Harburger—or even with an isolated ceratohyal nodule or a calculus in Wharton's duct. Such nodules have no connection with the cranium or the hyoid, and the resistance they offer is within the tonsil and not outside it. The operation for resection should be preceded by a tonsillectomy, as this is a palliative which occasionally cures the symptoms. It is inevitable if the resection is to be performed through the tonsillar fossa, a route which is often convenient. If the abnormal ossification is only discovered in the course of a tonsillectomy, it is simply exposed and cut off with strong scissors or a bone-cutter. Very often the tonsil adheres so tightly to the bone that it cannot be removed without it.

If the operation is for removal of the bone alone the patient should be prepared as for a tonsillectomy and the anaesthetic for choice should be local. The ridge made by the bone is incised upon and the resection made as extensive as possible. With ordinary care there is no danger of touching either carotid at this level, but the resection must not be carried up the styloid process where the external carotid and cranial nerves lie close to the bone. With careful hemostasis the operation should give no troublesome after-results.—(*Lancet*, May 22, 1926.)

The Value of Special Tonsillectomy Scissors in Dealing with Peritonsillar Abscess

CHARLES CONRAD MILLER, M.D.
Chicago, Illinois

Chiari, in 1889 (*Weiner Kleinsche Wochenschrift* No. 43), recommended incision for peritonsillar abscess half way between the posterior upper molar and the base of the uvula. It is at about this point that most peritonsillar abscesses are opened today.

Meurman (*Acta Oto-laryngologica,* Vol. IX, p. 154) points out as three possible objections to this incision: the difficulty of finding the abscess when small, the depth through edematous tissues that the incision must be made when the pus is deeply situated, and the possible danger from severe bleeding when such deep incision is made.

For opening peritonsillar infections, Killien (*Arch F. Laryng.* Bd 7) recommended a bent blunt probe, inserting it between the tonsil and the anterior pillar, pus being usually reached by pushing the probe lateralward. When the pus is more posterior, the probe may need be passed through the upper angle of the tonsil proper.

Henrici (*Arch. f. Laryng.* Bd. 33) recommended a scalpel instead of the blunt probe.

Kremm (*Zeitschrift f. Hals-Nasen U. Ohren.* Bd. VIII) recommended primary incision after the fashion of Chiari, and later excised a portion of the upper pole of the tonsil and its underlying capsule. His idea was to minimize tendency to recurrence of the abscess by this technic.

Levinger (*Münchener Med. Wochenschrift* 1914 No. 23) suggested anesthetizing both pillars with 2 per cent Novocain, then incising along the anterior pillar, deepening the incision by blunt dissection until the upper pole was freed as in tonsillectomy. He then cut off from one half to one third of the tonsil. Prior to Levinger, according to Meurman, Winckler proposed tonsillectomy in abscess cases.

Loch (*Arch. f. Ohren* Bd. 106) recommended tonsillectomy using a two stage technic. His first operative interference consisted of loosening the upper half of the tonsil. Several days later he completed the operation, removing the tonsil and thickened capsule.

Peritonsiller abscesses vary in location and size. Those beneath the lower pole are uncommon because of the character of the subcapsular tissues in this situation. Those behind the upper tonsillar levels may be situated close to the anterior pillar, well beneath the tonsils or near the posterior pillar. The character of the swelling usually indicates the location fairly well, the peritonsillar infection when situated beneath the anterior pillar making this part much the most prominent, usually such abscesses rapidly form considerable amounts of pus.

In this type of case, where there is much swelling, incision after the manner recommended by Chiari usually brings pus. In cases where swelling at this point is not so pronounced some circumspection should be used by the operator, as deep incisions through swollen tissues are not painless, even though local anesthetics are injected. Other methods of procedure may be used to better advantage.

Infections well behind the tonsil lift the tonsillar structures. These tissues may also show greater degrees of inflammation than in cases where infection is under the anterior pillar. Infections beneath the posterior pillar will often show marked swelling of this part. The small abscess well beneath tonsillar tissue proper may cause undefined general swelling. Pain felt in the ear has usually been taken as an indication of abscess beneath the posterior pillar, although it is my own experience that pain in the ear, not infrequently, is felt where the infection is beneath the tonsil, or even in the usual anterior situation, provided the extent of the inflammatory reaction is such as to involve the tissues beneath the tonsil proper and those beneath the posterior pillar. It is sometimes more significant of the extent of the inflammatory process than the location of the pus.

Many observers have tried by other means than by inspection to locate the pus. Bimanual examination, directly palpating the tonsil and peritonsillar structures, has been advised. In large purulent accumulations, fluctuation may be thus discerned, and in some cases an effective site for simple drainage may be indicated by a point of softening.

It is the ill-defined purulent accumulation which may de difficult to locate. In these cases palpation, eitheir with the finger or probe, is usually ineffective. Probe pressure may be tried at various points, the point of greatest tenderness being taken as the best for incising.

The patient with the abscess beyond the tonsil suffers intense pain. Early opening, when effective, relieves promptly. To give the patient the best possible care, effective draining should be instituted at the earliest possible moment. If time is given for the pus to accumulate in quantity, incising anywhere over the tumor may bring pus, but the damage which accrues to the patient from such accumulations should always be avoided. If really early incision is practiced, the incision recommended by Chiari will often be ineffective. The surgeon can better use a technic which will expose the pus accumulation in any situation. Such a systematic plan prevents the surgeon disappointing the patient and allows the operator to approach any case with confidence. My own plan is one of systematic progressive attack, a technic which can be stopped any time that pus is found, but one which progresses without unnecessary damage to the tissues until pus is found.

When surgical attack is made early, the tissues beyond the site of a small abscess are but slightly involved in inflammatory processes and careful infiltration with novocain will permit of painless dissection. There is also less bleeding, and the operator can easily keep his bearing because of the undisturbed anatomical relations.

Weak novocain solutions, so much in favor in general surgery, should not be used where tissues somewhat inflamed are involved. Stronger solutions, from two to four per cent, can safely be used, if the operator take a very simple precaution. In surgical operations, when toxic effects are noted from novocain, the toxic effects follow almost immediately the early injection. Whenever novocain is to be used in an operation, the surgeon should make a puncture and inject a very small amount of novocain. If the patient is hyper-sensitive to the drug toxic manifestations are almost immediate. If the operator take this precaution, stronger solutions can be used than the one-half per cent so much in favor, the analgesia is immediate, and in inflamed tissues the analgesia is much more satisfactory.

(Concluded on page 92)

Colostomy

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The term "Colostomy" has superseded the older word "Colotomy" as being more properly descriptive. It refers to the establishment of an artificial opening into some part of the colon after the bowel has been attached to the abdominal wall, and having for its object the diverting of the fecal stream. This opening may be either permanent or temporary, and the technic is modified according to the permanency of the opening desired. Its field of usefulness is limited to the pelvic bowel because in lesions within the abdomen a lateral anastomosis, or implantation of the ileum into the rectum, secures the same results without the disadvantages of the abdominal anus.

The indications for colostomy are:

1. Congenital malformation in which the gut ends in a blind pouch, imperforate anus, atresia of the vesicles or atresia urethralis, and megasigmoid.
2. Inoperable and undilatable stricture of and neoplasms of the rectum.
3. Ulceration of the pelvic bowel due to catarrhal disease, dysentery, tuberculosis or syphilis.
4. Inoperable fistula opening into the bladder or urethra.
5. As a preliminary step to extirpation of the rectum or as an essential part of the surgical procedure where it is impossible to re-establish the intestinal canal after resection of the diseased portions.
6. Where the sphincters have been destroyed by previous operation.
7. Multiple polyposis of the pelvic bowel with exhausting hemorrhage.

In all of the above mentioned conditions intestinal obstruction, pain, hemorrhage, diarrhea or discharge endanger the sufferer's life, and these symptoms may be relieved by diverting the fecal stream, thus giving the diseased bowel rest from the constant irritation incident to contamination by the feces and the constant tenesmus.

The advantages of a colostomy are:

1. The individual is spared the agony of death by intestinal obstruction. Also if an abdominal anus is made before obstruction occurs the operation is attended with almost no mortality; but if postponed until a *dernier ressort*, when the patient is *in extremis*, even a slight added burden may be more than the heart can stand.
2. Pain may be occasioned directly by ulcerations within the pelvic bowel which may resist all local treatment, or indirectly by excoriation from the irritating discharges flowing through the anus. Or never ceasing tenesmus may prevent the individual getting his much needed rest and sleep.
3. Many clinicians believe that colostomy retards the growth of rectal cancer by the physiological law that disuse of a part is followed by a diminished blood supply and atrophy (Cooke). This opinion is not concurred in by all proctologists, but all do agree that in cancerous or benign stricture it substitutes a painless death for one of intense agony.

Without interference rectal cancer usually develops complete obstruction and that within a year (sometimes within a few weeks) after the first evidence of stricture is complained of. The patient usually wishes to postpone the colostomy and may even procrastinate until obstruction occurs. The author recommends operative interference as soon as the diagnosis is determined. If excision of the growth or anastomosis around it cannot be performed a colostomy is earnestly urged. The idea of a colostomy is of course repugnant to any individual, but the relief obtained by the operation is so great that his mental attitude becomes cheerful, he is relatively contented, and often expresses a wish that he had consented to the operation earlier.

Two different procedures are designed to fulfil the indications for temporary or permanent anus according to the nature of the patient's ailment.

Temporary Colostomy

Temporary colostomy is indicated in those cases in which the disease is deemed curable by local treatment or surgical procedure, and in which it is intended to re-establish the normal fecal current, later. This type of operation is also employed where the patient is *in extremis*, requiring immediate relief from obstruction, but who cannot withstand even a slight amount of surgical shock. In such instances the procedure must be conducted under a local anesthetic and with the utmost dispatch. The indications for a temporary colostomy have been much restricted since the introduction of appendicostomy and cecostomy. The colostomy incision affords an opportunity to make an examination of the abdominal contents and to determine the local extent of the disease together with the amount of involvement of neighboring organs (bladder & uterus), the lymphatics and the liver.

The portion of the bowel used for the colostomy depends upon what is intended for the subsequent procedures. If the disease is to be treated by resection of a portion of the gut below, the bowel is dragged out until the upper segment is taut, that as much as possible of the sigmoid may be left below for the re-establishment of the natural intestinal canal, because the longer the loop below the artificial anus the easier will be the subsequent operation of extirpation or resection.

The temporary colostomy must be so constructed that when it has served its purpose and is not further needed the opening may be closed without endangering the patient. The older types of operation necessitated resection of the bowel and this procedure was more fatal than the original operation. The present temporary colostomy, however, can be made in such a manner that the artificial anus may be closed without opening the peritoneal cavity or resecting any portion of the gut.

The site of the temporary anus depends upon the location of the disease and the treatment to be adopted. When local treatments are being given the new anus may be placed at any point above the disease, but when operative procedures are to follow, the anus should be placed sufficiently distant from the disease to allow freedom in removing the diseased portion and in rebuilding the structures afterward.

Sometimes the sigmoid has a very short mesentery which prevents the bowel being drawn well outside of the abdomen, or inflammatory adhesions may produce the same condition. In such patients the colon higher up must be used, because if the bowel is drawn up forcibly it will cause the patient much agony afterwards, due to traction on the mesenteric nerves, and later the colon will retract and tend to close the aperture, thus frustrating our purpose. The descending colon usually has

a very short mesentery, its posterior one-third lying behind the peritoneum and somewhat fixed to the posterior abdominal wall. The sigmoid, however, is completely surrounded with peritoneum and has a long mesentery, varying from three to six inches in length.

Operative Technic

In planning a colostomy it is essential that there be free exit of the feces as well as a blocking of their progress into the bowel below, and that the opening be so placed that it will not interfere with the re-establishment of the normal fecal current later, if such be desired.

The patient receives the usual preparation for a laparotomy, but in emergency cases detailed preparation will be impossible and the patient must be prepared in the operating room. As soon as the patient is unconscious of what is going on he is placed in the Trendelenburg position and supported at the shoulders by well padded shoulder pieces. The legs below the knees are raised to a horizontal level. In this position the rectus muscles are more relaxed than when the legs are flexed at the knees. The patient is maintained in position by fastening the legs to the table. This position rids the pelvis of all or nearly all of the small intestine before the abdomen is opened.

The abdomen is opened through a four-inch incision beginning one inch below and one inch to the left of the umbilicus.

With the new anus in this position the patient may sit upon an ordinary toilet seat with a pus basin underneath the opening and relieve himself with little or no trouble. The parts can be easily cleansed.

The rectus muscle and fascia fibers are carefully split by blunt dissection, and not cut across, thus preserving intact this muscle's blood and nerve supply as well as its function. All bleeding is checked before the peritoneum is opened. As the peritoneum comes into view it is lifted up with two pairs of hemostats and carefully nicked open between the foceps. The omentum and intestines are usually close against the peritoneum, which must therefore be lifted up and opened cautiously to avod injuring the underlying structures. Through the opening in the peritoneum two fingers of the right hand are inserted into the cavity, and the abdominal walls are well lifted up. The inrushing air will cause any coils of intestine which have not gravitated out of the pelvis to slide upward, so that it is usually necessary to employ only one small gauze square to get excellent exposure. The abdominal opening should be made large enough to permit the introduction of the hand to carefully explore the pelvic and abdominal cavities, the liver and the lymphatics, before attempting to find the sigmoid. By this examination the collapsed portion of the bowel below the obstruction is located and the most desirable portion of the bowel for the colostomy determined.

With the hand well down in the pelvis, one may locate the rectum and, passing upward, secure the lower loop of the sigmoid and drag it out of the wound, at the same time definitely determining which is the proximal and which is the distal portion. The sigmoid may be further recognized by the longitudinal muscular striae and the appendices epiploicae. The transverse colon may be mistaken for the sigmoid if the former is much prolapsed.

The operator must be quite positive about this relationship, as otherwise, if there be a long slack mesocolon, the portion of the bowel brought out and opened may be twisted upon itself and complications may occur later because of this.

The sigmoid being located, the length of its mesentery is determined. Occasionally the mesentery is very short or absent and it may be difficult to bring the bowel far enough forward to employ the desired technic with success. Usually the mesentery is long enough to allow of the loop of the sigmoid being lifted out beyond the skin level until it is taut and a bloodless portion of its mesentery selected. While thus exposed an incision (as described by Sistrunk) one and one-half inches long is made through its mesentery, parallel to the direction of the blood vessels and extending upward nearly to the bowel. A second incision, about one inch long, is then made across the end of the first incision quite near the mesenteric attachment of the gut. The length of this cross incision varies somewhat with the position of the blood vessels. Two strips of gauze are placed in the upper end of this T incision and when these are pulled apart a good sized opening through the mesentery is created.

The middle portion of the wound is now closed, in layers, through the breach in the meso-sigmoid. Closure of the upper and lower angles of the wound snugly applies the abdominal wall to the penetrating loop of bowel and prevents the possibility of later hernia or prolapse. No sutures to the gut are necessary.

The supporting gauze strips are now removed and a glass rod 4 inches long by ¼ of an inch thick is drawn through the opening in the mesentery. This rod acts as a support for the bowel and as a guide when opening the bowel later. A pad of gauze is placed under each end of the rod to prevent injury to the skin.

The lower loop of the gut may be compressed against the glass rod. The whole exposed loop of bowel is smeared thickly with vaseline and then wrapped with a piece of rubber tissue to prevent its adhesion to the dressings. A bountiful dressing of loose gauze covers the whole and is held in position with adhesive straps, being careful in applying the straps that they are not placed over the bowel. The intestine is not usually opened at this time. If there is a great distention of gas, a trocar is immediately placed in position, anchored with a couple of Lembert sutures, and sealed with collodion.

The bowel may be opened with safety in from 12 to 48 hours by an incision through the longitudinal muscular band opposite the mesentery, extending from the upper angle to ½ inch below the glass rod. A transverse cut is also made across two-thirds of the bowel at the level of the rod. The triangular flaps of the upper segment roll backward, the lower flap drops downward and inward, closing over the lower opening. The fecal discharges are thus carried outside of the abdomen with scarcely any possibility of their getting into the bowel below. By this technic none of the intestinal wall is sacrificed, thus facilitating closure of the artificial anus later when that is deemed advisable. The opening of the intestine requires no anesthetic whatever.

The supporting glass rod should be retained a few days after the bowel has been opened and may then be removed.

This method, devised by Tuttlle, we have found particularly satisfactory. It allows free exit of the fecal discharges and should irrigation or treatment of the bowel below the colostomy be desired the opening of the distal segment is easily exposed by lifting the lower flap.

After Treatment

The patient should be kept as quiet in bed as possible. A pillow under the knees relaxes the abdomen and he should be given sufficient morphine hypodermically to control the vomiting and the intestinal peristalsis. There may be no evacuation for several days following the

(Concluded on page 94)

An Apparatus Which Approximates Continuous-Flow Transfusion

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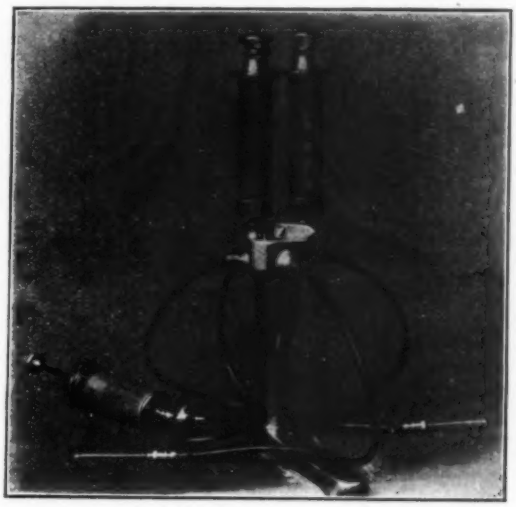
The pioneers in the art of blood transfusion, originally, sutured the donor's artery to the patient's vein and then trusted to their judgment as to how long it would take for the passing of the desired amount of blood. As time went on, however, it was found necessary to devise some means whereby actually to measure the quantity of blood passing from the donor to the recipient. Various methods have been employed and various forms of apparatus used. In presenting my own apparatus, I am endeavoring to introduce a new principle into the art of blood transfusion.

The accepted principle, irrespective of the kind of apparatus used, is to draw blood from the donor and inject it into the recipient. Although the success of this procedure depends largely upon the skill and experience of the operator, yet it has its great handicap, which, to a large extent, is beyond the control of the transfusionist. This great drawback is the WAITING TIME OCCASIONED. While the operator is drawing blood from the donor the recipient's stream of blood, in the apparatus, is stagnant. Then while this blood is being delivered to the recipient the donor's stream is stagnant. The period of immobility of these streams of blood varies according to the ability of the operator and the smoothness with which the apparatus functions.

It is well known, and it seems hardly necessary for me to delve into the physiology, that blood begins to clot almost as soon as its mobility is hindered, and especially so when it is in contact with foreign or inorganic matter. The transfusion apparatus can certainly be classed as such. The inconvenience of transfusing blood that has begun to clot, and the aggravation occasioned thereby, only the transfusionist can appreciate. But the real danger is to the patient. Blood that has begun to clot enters the patient's body in an altered state. This, I believe, needs no expanded discussion.

The agglutination of blood is brought about by the formation of fibrin from fibrinogen through the agency of thrombin. Fibrinogen is only present in, and is a normal constituent of, blood while in the state of circulation. It is only to be found in normal blood. Thrombin makes its appearance when blood becomes still in an abnormal environment and encourages the normal fibrinogen to assume the abnormal form—fibrin. Fibrin and thrombin are, therefore, ABNORMAL CONSTITUENTS of the blood. Hence that section of the stream, stagnant in either the donor's or recipient's part of a transfusion apparatus, has time, little as it may be, for thrombin to appear and thus enter the patient's body carrying along some fibrin that has had time to form. Small as the amount may seem its presence is foreign and may form the nucleus for a thrombus or an embolus. The danger of this needs no further discussion.

It has, therefore, appeared to me that in order to overcome this menace it would be necessary to devise some means whereby the blood streams of both the donor and recipient could be kept in motion as much as possible during the procedure of transfusion with the use of a measuring apparatus. In other words, to reduce the WAITING TIME, during which the blood remained stagnant, to a minimum. With the use of this apparatus I believe that the WAITING TIME is so small as to be negligible.



The apparatus employs two syringes, a housing block, and a weighted valve, all supported upon a specially constructed base that may be clamped to a table.

The two syringes are of no special construction, except that they are manufactured to work smoothly and the bases made to fit the junctions on the housing block. In this case I have found that a bayonet type of lock is best suited, because these syringes are set in a vertical position and should remain rigid and firm.

The housing block comprises a cubical block of metal through which has been drilled two tunnels crossing at right angles in the center, and are in a horizontal plane. Through the center, in a vertical plane, is also drilled a large round hole, cutting the two tunnels into four separate tunnels, and ground to receive the main valve. Two of the four tunnels, thus separated, and running in like direction, are known as the donor and recipient tunnels. They serve to direct the donor's blood stream into, and the recipient's blood stream out of the housing block. The remaining two tunnels, also running in like direction, but across that of the other two tunnels, serve to direct the donor's stream into a syringe on one side or the other, and thence into the recipient tunnel. They are known as the syringe tunnels. At the distal ends of the syringe tunnels a passage is bored at right angles, and in a vertical plane, continuing these tunnels to the top of the housing block, where the female sections of bayonet locks are set to receive the male ends attached to the bases of the syring barrels. The syringes are thus set in an upright position. At the distal ends of the syringe tunnels are also set tips to receive rubber tubing. These two tubings are brought together outside of the housing block by connecting the free ends to a three-way stop cock, the third opening of which is fitted with a connection to receive an auxiliary syringe (suitably a Record syringe), employed to inject saline solution into the housing block,

main valve and syringe tunnels should they become clogged, thus making it unnecessary to remove the syringes for cleaning and thereby eliminating that waste of time. Tips are also set in the distal ends of the donor and recipient tunnels for the attachment of rubber tubing connecting with the needles that are inserted into the respective veins.

The weighted valve is round and ground to fit the center hole of the housing block with practically an air-tight fit, yet free enough to turn. Its length is that of the height of the housing block. To the upper surface is attached a horizontal arm for the purpose of turning the valve to the right or left. Two tunnels are drilled through this valve in a horizontal plane and at right angles to the long axis of the valve. They are known as the valve tunnels and are exactly parallel. Each runs from a point on the circumferance, through the valve body, and emerges at a point ninety degrees, on the circumferance, from its entrance. The level of the plane of these tunnels is exactly on a par with that of the donor, recipient and syringe tunnels when the weighted valve is properly seated in the center hole of the housing block. The valve tunnels serve to connect the donor tunnel with that of the syringe tunnel on one side, and the recipient tunnel with that of the syringe tunnel on the opposite side. Two stops are set in the housing block so that the guiding arm of the valve will turn to the right or left in an arc of exactly ninety degrees and stop, bringing the openings of the tunnels of the valve into direct apposition with the proximal apertures of the donor, recipient and syringe tunnels in the housing block. By turning the weighted valve through an arc of ninety degrees the valve tunnels change their position. The valve tunnel connecting the donor tunnel with the syringe tunnel on one side now shifts and connects it with the syringe tunnel on the opposite side. The same things happens with the recipient tunnel. Its course is shifted from the syringe tunnel on one side to that on the other. Thus the donor tunnel is connected with the syringe tunnel that had just been connected with the recipient tunnel, and the recipient tunnel is now connected with the syringe tunnel that had just been connected with the donor tunnel. So that the action of the weighted valve is a double action, and serves to shift the donor's and recipient's blood streams to either one syringe or the other by a ninety degree turn of the guiding arm.

THE ACTION: Rubber tubing is connected to the distal ends of the donor and recipient tunnels of the housing block. The free ends of the tubings are attached to the proper style needles for insertion into the donor's and recipient's veins. All tunnels of the apparatus, rubber tubing, needles and syringes are filled with saline solution (to expel all air), by means of the auxiliary Record syringe, the three-way stop cock is closed, the needles inserted into their respective veins, and the apparatus is ready to function.

The valve arm is turned to a stop on one side of the housing block. The plunger of the syringe, whose tunnel is connected with that of the donor tunnel, is slowly raised until the syringe barrel is filled with the donor's blood. The weighted valve is now turned through an arc of ninety degrees to the opposite stop. This action shifts the stream of blood in the syringe just filled from the donor tunnel to that of the recipient tunnel, and at the same time connects the donor tunnel with that of the syringe still empty. The plunger of the filled syringe is now depressed, forcing the donor's blood through the recipient tunnel. At the same time the plunger of the still empty syringe is raised, filling the barrel of that syringe with the donor's blood. The valve arm is then turned back ninety degrees to the first position. This again reverses the direction of the two streams of blood, bringing the syringe tunnels into communication with the donor and recipient tunnels as they were before. The filled syringe is emptied into the recipient tunnel and the emptied syringe barrel is again filled with blood from the donor tunnel at the same time. The valve is again turned through an arc of ninety degrees to the opposite side. The procedure is thus continued until the desired amount of blood is transfused. The plungers of both syringes are always moving in opposite directions and at the same time. While one is filling the other is emptying.

CONCLUSION: With the use of this type of apparatus we deviate from the orthodox methods of transfusion and employ an improved and better principle, namely, that of maintaining the mobility of the blood stream, from the donor to the recipient, to such an extent as to make the actual WAITING TIME in the apparatus of such short duration as to be, practically, negligible. (The actual WAITING TIME is only as long as it takes to turn the valve arm through an arc of ninety degrees.) By causing the blood stream to be constantly in motion we cause it to enter the patient's body in as near the normal state as is possible without resorting to anastomosing the donor's artery with the recipient's vein. For blood that is constantly in motion has very little opportunity to give rise to the presence of thrombin, and so we lessen the possibility of the formation of fibrin. So that by preventing the blood from beginning to coagulate, and by reducing the WAITING TIME during which it remains stagnant in the apparatus to a negligible minimum, we prevent blood in an abnormal state from entering the patient's body. We thus reduce the possibility of embolism or thrombosis to a minimum by preventing fibrin and thrombin (abnormal blood constituents), from entering along with the transfused blood, and acting as a nucleus.

Finally, another important factor is the rapidity with which the transfusion of blood can be performed. For, bear in mind, two syringes are employed at the same time, operating simultaneously, one drawing blood from the donor at the same time that the other is delivering blood to the recipient, and vice versa. This saving of time is certainly of vast importance in those cases of emergency where the time element plays such a great part.

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Birth Registration

Dr. William H. Davis, chief statistician of Vital Statistics, Bureau of the Census, in a report recently issued by the United States Children's Bureau, tells of methods for effectively stimulating birth registration. "To obtain good registration," he says, "good registration laws and good enforcement of these laws are essential. Of the States not in the area, only four have unsatisfactory laws. To enforce these laws successfully, however, it is necessary to: (1) Make plain to everybody that good registration can be accomplished only through a good State registrar and a sufficient number of clerks, so that at all times the central office will know where the weak spots are and will promptly attempt to remedy the defects. (2) Sell the idea of better registration to the physicians, the women's clubs, the chambers of commerce, the general public, and the mothers themselves. (3) Let the women's clubs and the chambers of commerce insist on improved enforcement, on prosecution of physicians or midwives who continuously refuse to report births, and on the monthly publication of compilations by the State registrar of the percentage of deaths of infants under one year for whom there were no corresponding birth certificates on file."

Animal Experimentation

Use of animals in the study of the physiology and pathology of the human race during the last 30 years has added 12 years to the span of human life, according to a statement by Dr. Simon Flexner, Chairman of the Public Health Council of the New York State Department of Health and Director of the Rockefeller Institute for Medical Research.

The Bottle-Fed Baby*

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Much has been written and said about the bottle-fed baby. There is always an argument for both sides of this question, as there has been to all questions which have come before the people of all times, yet there are more bottle-fed babies today than ever before since the dawn of creation. Therefore it becomes more necessary than ever to study this matter thoroughly before arriving at any conclusions.

It is impossible to say much about the bottle-fed baby without at least making some explanation about the breast-fed baby, for if every mother lived through her baby's first year of life, if every mother was able to nurse her baby during this period, and if the milk was in every case just the food nature intended it should be for each individual baby, there would absolutely be no such a thing as a bottle-fed baby. But such ideal conditions have never existed, they do not now exist and furthermore never will.

I desire to emphasize in the very beginning that I have always stood for and still stand for breast feeding in all cases of infants under one year of age, provided the milk is what it should be and is producing the desired results with the baby, but, as much as I prefer breast feeding, I am unalterably opposed to letting a baby starve, or allowing it otherwise to nurse unwholesome milk, just for the sake of keeping it on breast milk. It must be admitted that it occasionally happens that a mother cannot nurse her own baby: especially is this true of three classes of mothers; First, where the mother dies when infant is born or develops some wasting disease during the early months of the baby's life; Second, where the mother is compelled to leave her baby for the day and go to work in some industry to earn or help make a support for the family. The third class is represented by the mother who persists in leaving her baby for the sake of attending from one to three parties each day. She eats freely of rich food and keeps herself on a high nervous tension, consequently her milk is often not very conducive to a healthy, happy baby.

The irregularity with which such mothers allow breast nursing, sooner or later makes it necessary to give the baby artificial feeding. Possibly 50 per cent of the industrial class and fully the same percentage of the social class are completely weaned from the breast by the end of the sixth month. The first is an economic while the latter is a social problem, neither of which have had or can have sufficient pressure brought to bear to emphasize the great responsibility of a mother to her infant.

There are many laymen and some physicians who are unyielding in their stand that infants should be kept at the breast, regardless of the results to baby. They seem to be of the opinion that breast nursing is the cure of all ills of infants. While, as I stated before, I stand unqualifiedly for breast nursing, provided the baby is getting the desired results, yet I am equally as much opposed to depending entirely on the breast when the baby is showing a continual loss or a continual no gain.

The mothers milk should be carefully examined to ascertain not only the butter fat, but also the quantity the baby gets within a period of twenty-four hours. The milk can easily be examined in any physician's office to check up with the butter fat. By weighing the baby on accurate scales before and after each nursing for twenty-four hours it can be estimated very closely as to how much milk the baby is getting, and by examination of the milk you can know the quality. By such a plan it can be easily calculated by any physician to ascertain what amount of calories the baby is getting from the milk in any given period. By knowing the age and weight of the baby it can be very accurately determined as to the deficiency in daily intake of calories.

My observation of such cases gives me the conclusion that complemental feeding is much to be preferred, that is give the baby enough of artificial feeding of milk at each nursing period to balance up with its lack of breast milk. By so doing the infant has not only the benefit of the mother's milk to help make it easier for the artificial to become well digested, but the regularity with which the infant nurses in contrast to the supplemental method of feeding, keeps the mammary glands secreting properly.

The big question then arises; What is the best artificial milk feeding for infants who are not getting enough at the breast, or for infants who have to submit to early weaning? There are many kinds of milks. I dare say all of them have given good results in some cases. Some prefer goat's milk. I know very little about this kind, experimentally, for we have not enough goats in my state to give the matter a fair trial, therefore it is not practicable to use. Many use condensed milk, possibly because it is cheaper, can be gotten at most any lunch stand or country store, is so sweet that babies usually like it and often makes fat babies. Anyone who takes the trouble to follow up condensed milk-fed babies will find in at least 75 per cent of the cases, that while the baby is fat, yet it has very small bones and not much muscle, and further still, a very low resistance to all infections. Many such babies have rickets and scurvey before two years of age. I might use condensed milk temporarily for a short time, but I would certainly advise against using it or any other very sweet food at all as a permanent feeding for any baby.

A universal method of infant feeding for many years has been raw cows' milk. This method would be closely approaching ideal, provided there were not so many "slips between the cow and the lip." In the first place, cows' milk in the raw state is much harder to digest by most babies, it is hard to adjust to various infants simply because the milk varies in fat content. But greater than all, it is very difficult to get it to the baby as safe milk. There are many dairies which are very careless as to their methods, to say nothing of the many private homes where there are from one to three cows with a surplus of milk to sell the neighbors, and almost without any sanitary methods of safety. Thousands of homes, especially of the industrial class in our large cities, are not provided with means of keeping the milk at a proper temperature, and as a result, the baby is given spoiled milk, gets sick and many thousands of such cases add annually to the total of infant mortality in our nation. While we know that pure milk which has been properly handled from the dairy to the baby, is the best food known to science, yet we equally know that if not properly handled it may become the most dangerous food known to civilization.

*Read before the Whitfield County Medical Society at Dalton, Georgia, December 16, 1926.

We live in a progressive age. We see the signs of progress on every turn of the head. Roads, means of communication, ways of travel, factories, even the June rose, every specie of fruit and vegetable, show the skill of human beings, so why not join the procession of progress in safe infant feeding? Some of the great laboratories have studied out an idea as to how pure fresh cows' milk may be taken, relieved of its water by a process of heat, and then in its dry state, shipped to any part of the world where it may be reconstructed by putting the dry solids back into absolutely sterile water in such proportions as any infant may demand to meet its food requirements. It is almost impossible for dry milk to spoil, for the reason that in its dry state there is nothing to encourage bacterial invasion.

In my experience of seventeen years with raw and condensed milks and seven years with several thousand infants fed on dry milk, I am absolutely convinced that dry milk is just as good as any fresh liquid milk, and in fact much superior in quality, digestibility and safety to much of the raw cows' milk offered consumers. I have made a close follow-up of hundreds of infants I have fed on dry milk, and I am thoroughly convinced that any child fed on this milk has no more danger of scurvey or rickets than when fed on any other kind of mlk, in fact some of the worst cases of rickets I have ever seen were a few breast-fed babies where the mothers' milk was very poor in quality. I have never had a symptom of scurvy or rickets in any baby taking dry milk where my directions were followed by the mother or nurse.

The most attractive thing about dry milk is that you can depend absolutely on its safety. It is simple to prepare at each feeding, and I have found it to be even more digestible and nutritious than fresh liquid milk. I get the desired results in practically all my cases fed on dry milk.

There are many kinds of dry milks just as there are many grades of raw milk. I have tried all of them that I have seen on the market. Some are better than others, especially for infant feeding. In my experience of several thousand cases, it has been my conclusion that at least 75 per cent of the feeding disturbances of babies are the direct results of high butter fat, therefore whether using raw or dry milk my plan is never to use a higher butter fat in milk than 2 per cent during the first year. There is absolutely nothing to be gained by giving an infant more fats than it can handle. On the contrary high fats are liable to cause serious nutritional disturbances. I generally select the dry milk which is 12 per cent butter fat in the dry form. When reconstructed by the addition of one level tablespoonful of dry milk to the ounce of sterile water, one gets a full strength milk giving a butter fat of 2 per cent and the curd is so broken up during the process of dehydration that all the fats promptly digest, giving better results to the baby than in many other cases where I have tried to use a milk formula of from 3 per cent to 4 per cent fats, when made up. Higher butter fats than 2 per cent in milk formulas will cause fatty indigestion in most babies under one year of age. The 12 per cent dry milk has its fats so split up in the drying process that when made into a full strength milk formula of 2 per cent all of its fats are digested, giving much better results to the baby than the average whole raw or dry milk giving a much higher fat formula with a good portion of the fats passing through undigested.

Dry milk is now being considered as a great possibility in solving an international economic and sanitary problem by reason of the fact that one portion of the world where dairying is not possible may be supplied with pure milk in the dry powder, from some other portion of the world where dairying is extensively followed, thereby making it possible even in the tropics for bottle-fed babies to get safe milk.

Raw milk may be pasteurized or sterilized and made safe for a time but is that any assurance that the consumer will have either the intelligence or the facilities for keeping it safe until consumed? We are informed by chemists that milk after being pasteurized or sterilized has its resistance distroyed, therefore if not kept at absolutely the proper temperature may become even less safe than raw milk. It is also not practicable to ship sterilized or pasteurized milk to other portions of the country to be used as safe bottle-feedings for infants.

For twenty-four years I have been a rather close observer and student of infant feeding. For seventeen years I did not make much headway, for the reason that with at least 75 per cent of the people it was impossible for them to get and keep safe milk for the bottle-fed baby. Some years ago I visited some of the principal pediatric centers of our nation. I watched the feeding problem and saw that many of them who were using the methods I had always used were getting very similar results. I also observed in some of the large hospitals for infants, clinics and welfare stations the good results which were following the use of dry milk. I returned to my home city and began using this milk and watching results. I used it with several hundred infants before I drew any conclusions. I have now used dry milk in several thousand feeding cases. My results have been almost 100 per cent excellent. I apologize to no one for using a milk which means so much to infant life as does dry milk when the baby is deprived of a full share of breast milk, in fact I feel like apologizing to the infants of yesterday that our great laboratories throughout our country were not able to establish dry milk for infant feeding in their day. In my candid opinion, based on several years of observation and experience, dry milk is having more to do with the prevention of infant mortality and thereby extending the average age of human life than any other factor. Time will prove this to the satisfaction of the leaders of our profession. I am not urging any physician to take my word for the merits of dry milk. All I ask is that you throw away your prejudice and give it the same fair and impartial trial that I have done and your results will make you equally as enthusiastic for this milk as I am. What I want is the safest milk which will give me the best results to baby. My experience has demonstrated to me that we have it in dry milk.

We hear much of what is called lactic acid milk. I have prescribed it myself and have gotten excellent results in some cases where the infant's digestive powers were below normal, but it must be remembered that the addition of lactic acid to milk does not add one iota to its safety, if the milk has been poorly handled. Lactic acid only aids digestion in some cases. It breaks up the curd and therefore from that standpoint simplifies digestion of milk.

When I have a patient whom I think would do better on lactic acid milk, I use dry milk 12 per cent as a basis for my lactic acid milk, therefore I have a double check on the breaking up of the curd, as well as including an additional element of safety by the use of dry milk. When prescribing 12 per cent dry milk there is no real need for lactic acid milk inasmuch as what lactic acid does in breaking up the curd has already been accomplished during the process of dehydration in the manufacture of dry milk, yet some of our leaders in infant feeding prefer to use 12 per cent dry milk as a basis for

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Malingering as a Factor in Negligent Action Examinations*

What Is Malingering? In Other Words What Is a Malingerer?

WALTER R. LOEWE, M. D.
New York City

The President, Col. Walter Jeffreys Carlin:

It is our good fortune to have with us tonight Dr. Walter R. Loewe, who is not only a well known medical practitioner but one who has had unusual experience in viewing many cases in which malingering was suspected. He served on the other side with the fleet during the war and subsequently for five years with the Veterans' Bureau, handling many thousands of cases.

We will take great pleasure in hearing him read the paper of the evening on the subject of "Malingering as a Factor in Negligent Examinations."

Several years ago, Lord Justice Buckley of England, defined a malinger as "One who is not ill, and *pretends* to be":—But if he really thinks he is ill, he is not guilty of that pretense.

Another authority states that a malingerer is one who feigns illness, or who deliberately (knowingly and wilfully) induces or protracts an illness, with the object of avoiding duty, claiming money compensation, exciting sympathy or for any other reason. Therefore, to repeat, when we say one is malingering, we mean that he is guilty, deliberately and knowingly of *pretending* to be ill, when he is not.

There is a distinction between malingering, which is really a conscious and deliberate simulation of illness, and exaggeration of symptoms and that other condition of unconscious or sub-conscious simulation of disease, which is known as Valetudinarianism.

A valetudinarian is one who, sub-consciously or unconsciously, simulates disease, and really often worries so much about his health, that he develops into a chronic invalid. This type can be cured by a physician, rather than by the jurist, which is so often the case of the malingerer, who after he has gained his end in obtaining compensation for his feign condition, rapidly regains his former health.

The diagnosis of malingering cannot be made by any set of rules, such as in bacterial conditions, like diphtheria or typhoid, etc. It is only after a truly careful study of all the circumstances surrounding a given case, that a diagnosis of malingering can be made, where the symptoms do not correspond with the sum total of the other factors found in a case similar to this, or a series of cases under similar conditions.

With the large awards in negligence cases and the advent of a properly functioning workman's compensation law, such as we have at present, the methods of the malingerer have become so ingenious, varied and numerous, that the subject has become overwhelming in its scope and more difficult, because of the gravity attendent upon any statements made by the physician in regard to the plaintiff's condition with the ultimate result these statements may have upon a satisfactory adjudication of the claim.

The subject must therefore be approached with considerable caution because of the fact that malingering is a really serious charge.

Malingering occurs much more often in accidents than in disease conditions because of the more apparent legal liability involved. Therefore examinations along these lines have to be carried out always carefully watching for the malinger.

If a carpenter lifts a radio battery into a cabinet in his home and develops a backache as a result of it he will try several home remedies of which he knows and soon forgets all about it but should he get the same pain in his back while at work lifting a plank of approximately the same weight as the radio battery in his home he will limp off, throw down his tools, consult his physician and wait for compensation settlement, and if not sufficiently large, or as large as he had expected, he will immediately turn the case over to some lawyer for a better adjustment; and, after all, it probably will be humanly natural to add a little "coloring" to this alleged cause of injury, in order to make, as he would call it, "a case worth while."

Observation of a large number of cases of similar injuries caused by similar accidents present one type of clinical picture and run one kind of course, with those people who make no claim for compensation or legal redress;—but an entirely different picture and an entirely different course of convalescence is presented, when the injured party becomes the plaintiff in action for damages by the usual legal route.

A man was once being examined for an injury to his right hand, which was not very severe; for which he was claiming compensation. During the examination, for purpose of comparison, the physician looked at the other hand, which however, had been injured more seriously in a previous accident. When asked how it was he had lost the tip of one of his fingers in the former accident, he said: "Oh, that's nothing, it was done at home."

The common law in such cases is that everyone should regulate his business in such a manner that injury shall not result to others. Failure to do this renders one liable in a suit for damages for negligence, in that a man is responsible for the consequences of his acts, which are the natural and probable result of his conduct.

The corollary of this is that a man is not only responsible for his own acts, but also for those of his servant, when the servant is acting in his behalf, within the scope of his employment.

If a man suffers personal injury in this way, he may recover the expense to which he is put and any losses sustained, or to be sustained in consequence of the injury, together with such sum, as compensation for pain and suffering, as a Judge or jury may award him. In view of the fact that once such a verdict is given in a case and the money therefor accepted that no further claim in regard to that accident can be made, it is reasonable to assume that every means available will be brought to bear, setting forth to the greatest degree the nature of the injury sustained, the incapacity and pain suffered and the probability of permanency of the disability.

The physician for the defense who is sent to examine the plaintiff has by no means an easy task. After having obtained permission to examine the plaintiff, his examination must be conducted in such a manner that it will stand the "acid test" of cross examination, and the too often contrary evidence of a fellow member of the medical profession.

It is always necessary that the facts in the case bear out logically the opinion which is rendered in court, and

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* Presented before the Society of Medical Jurisprudence at the New York Academy of Medicine, May 10, 1926.

your reasons, after examination, for having given the same. Conclusions not substantiated by facts are valueless in the determination of malingering, as far as the courts are concerned. Even though one is morally certain, beyond per-adventure, that the examined is an artful malingerer.

One must always be on the look out for disabilities, as mentioned before, which were sustained in a prior accident. Because of the fact that there was nobody upon whom any claim for damages could be made at the time of said injury, it often becomes an obsession with some people to try to attribute this disability to some subsequent accident, which could possibly have been a competent producing factor of the same, and try to collect damages for both injuries.

In order that an impartial verdict may be reached in the adjudication of these claims, a careful and complete physical examination should be asked for and insisted upon, as early as possible after the injury. It is not necessary to consider this examination as the basis in determining the final settlement of the case, but it should be used as a matter of record and dates set for as frequent medical re-examination by both sides as would aid in the proper determination as to the extent of the injuries, the amount of damages sustained, and the permanency thereof.

An early examination like this would often change the aspect of the case and be a means of reaching a much more satisfactory and early settlement, than if this examination be postponed with an entirely new picture, as far as the patient is concerned, and the matter has to run the gamut of a long and often slowly moving court calendar.

To bear out the advisability of an early examination by the physician for the defense, I know of a number of cases where the medical report has automatically settled the controversy.

If all cases were medically examined by a medical referee attached to the court by an order of the Judge, prior to proceedings, and it were known that the facts found by the independent expert would be treated by the court as the material upon which to base its decisions, there would be very few occasions on which the court would have to exercise its functions, except to administer the law in relation to the facts found. At any rate there would be an end of the extraordinary pathology and fantastic diagnoses, which some medical men find it consistent with their conscience and honor to place before a Judge in the hope that his lack of technical knowledge may give their client the benefit of a doubt. which should never exist.

It is usually a much more satisfactory arrangement to examine the plaintiff in the presence of his own physician, than in the presence of his attorney alone. I do not mean that his attorney should not be present at an examination. In most cases, however, it has been my experience that where the attorney and the physician are both present, the patient feels more confident, and is less apt to allow the element of fear to change the existing clinical picture.

The plaintiff's attorney should not worry as to the type of questions asked of his client. It certainly is not the duty of the medico-legal examiner to enter into the question of liability. If it is the intention of the attorney for the plaintiff to be present for the purpose of obtaining an idea as to what conclusions the examiner is making as a result of the examination, simply by means of observing the manner in which it is being conducted, I think it is a pretty hopeless situation, because it is almost as futile to try to ascertain what is in the mind of the physician, by watching him make an examination, as it is in trying to read the mind of an author who is in the process of constructing a play. The medical profession today have so many means of detecting a condition in the body, far remote from part of the immediate examination, that it is next to impossible to tell what a certain sign being observed by that examiner may mean to him and to him only. For example, the trained physician can see in examining the fundus of the eye with the ophthalmoscope the processes of various disease conditions which are occurring in other parts of the body.

You can see for instance, kidney, heart, diabetic, vascular and other changes, often before they are grossly manifested elsewhere in the body, and use the knowledge gained thereby to determine the cause and prognosis of a condition which we may have thought to have been that of malingering, whereas the symptoms were really due to a pathological condition and have no connection whatsoever with the condition upon which the suit for damages has been instituted.

It is important when making a medical examination for the defense, that the physician should not give any inkling by word or deed, by leading questions, and so forth, as to the symptoms possible in the alleged injury, because often it serves to furnish the patient, who wants to "color" his case, with ideas, and often produces an unconscious symptom complex, which may develop into a real hysteria. It is therefore important, especially in a case of true malingering, never to allow the simulant to know that he has been discovered in making a fraudulent claim, because if he is really dishonest, by the time the case comes to court, he has entirely new symptom complex, artfully designed to meet the condition.

It is a good idea to let the patient describe the accident in his own way, and if possible to demonstrate it. In the midst of these demonstrations, he often forgets the degree of his alleged incapacity, and gives the examiner a clue as to the proper method of procedure, for the purpose of really discovering if the case is one of malingering. For instance, he will bend to show where his back was injuring and by bending this way, we learn that his back is not rigid and painful as alleged in his tale of woe. I saw an example of this recently when I examined a plaintiff for an action brought to recover damages for an injury alleged to have been sustained by reason of a hanging outdoor sign falling on him.

This was a purely fictitious case, and typical of the worst kind of malingering. As a matter of fact, the plaintiff was safely in the store, talking to the proprietor thereof when the sign fell. Hearing the crash and seeing what had happened, the plaintiff suggested to the proprietor of the store that by suing the owners of the sign (who were manufacturers of ice cream) which supplied the sign and the cream for the store that they both would have a chance to make some "easy money".

Notwithstanding the fact that the proprietor refused to become a party to the fraud, the plaintiff instituted action, and claimed, among other injuries, a stiff back, which was excruciatingly painful on active and passive movement. During the examination and prior to his being stripped, he was told to describe and enact the accident. I carefully observed the patient while this conversation was in progress and noticed that while speaking of the accident he seemed to forget the existence of the stiff back, previously complained of, and bent forward demonstrating how the sign had struck him.

This case was dismissed by the Court after a trial.

A fatal error in cases of alleged trifling injuries is when the examiner for the defense gets on the stand and denies that the injury alleged to have occurred could not have been sustained.

Many trifling injuries leave absolutely no trace, except in the memory of the patient. That is the reason, and a most excellent one, as to why medico-legal examination be made at the earliest possible moment. The most honest and safe thing to do in these cases is to frankly admit that a trifling injury may have occurred, knowing yourself however, that had the injury been sustained other than those which suggested claims for damages, the plaintiff would have long since have forgotten the same.

In the course of a series of examinations which I have made, it appears that there are three general classes of patients that the physician making medico-legal examinations is called to report upon.

First—We have the patient who was really injured, beyond any question of doubt, who does not exaggerate, in any way, his condition.

Second—There is the type that is really injured, but grossly exaggerates the condition in every way. This type can be further divided into two classes:—(a) those who knowingly and wilfully exaggerate; (b) and those who suffer from hysteria, or valetudinarianism.

Third—There is a class in which there has been no injury sustained whatever.

The first class of cases may be eliminated, since there is obviously no element of malingering.

Of course we must again consider those cases of true hysteria and the so-called 'traumatic neurosis,' in which a patient does not intentionally deceive.

I wish to state here, that it is often helpful to examine a patient who complains of no eye injury, by means of the various malingering tests devised for ophthalmology, because it may help to further establish the veracity of patient and in a way ascertain the degree of co-operation. It is also most advisable to use the other fields of medicine, such as the X-ray and pathological laboratories, because a basic cause, constitutional or functional, may be discovered, which may be the underlying competent producing factor of the train of symptoms which we had originally attributed to malingering. For example, a man may claim that after having received a minor injury to his head, he suffers from dizziness, falling and stumbling when he gets into dark places. Without complete examination, including various reflexes and laboratory tests, such as the Wasserman test, we may never discover that this man may have been suffering from lues, which may have been a contributary cause, not only in causing the accident, but the existence and prolongation of the symptoms, of which he complains.

I remember a case which I examined in one of the large hospitals in New York, for a well known firm of attorneys, where a woman had crossed the street, Jaywalking, and was struck by an auto, sustaining injuries to her head. When she arrived at the hospital and regained consciousness, she spoke in a manner diagnostic of the mental state occurring in paresis. Serological tests were made and in going into the history, it was found that she had had treatments for syphilis. By the time this case came to trial, the woman had been declared insane. During the trial, everything seemed to be going along beautifully in favor of the plaintiff, until the attorney for the defense, who had been a doctor, brought forth the damaging testimony concerning the serological reports, showing that among other things that the cause of her insanity was in fact also a contributing cause of the accident, because of the fact that she was suffering from a confusional state at the time she was crossing the street, thereby causing her injuries, by running, as the driver described, into his car.

This case came to trial three times, and had not the physician made complete careful examinations, the outcome of the first trial would have been different.

Another good example to prove the importance of a thorough medical examination was a case which I examined recently, that of a woman who claimed damages for injuries which she alleged she sustained by reason of eating ice-cream, in which she claimed was a piece of glass, and which glass, she claimed, she swallowed, and as a result thereof she suffered with constant vomiting, loss of appetite, severe constant pains in her stomach, as well as gases. Examination disclosed that this woman was three months pregnant, a condition which she had not disclosed to me voluntarily. That her symptoms were unquestionably due to her pregnancy, apart from any substances of which she had partaken, there was no doubt.

You will be interested to know that the trial of this case is still pending.

The second type of case that in which the patient by reason of her very nervous condition sub-consciously exaggerates and magnifies her condition is a very difficult one for the physician to cope with. I had occasion recently to make an examination of a woman who claimed damages by reason of a lollypop, containing some foreign substances causing injury to one of her teeth, while eating the same. She claimed as a result of this she suffered with headaches and loss of appetite, was unable to chew her food, with the consequent gastro-enteric disturbances. There is no question in this case, that this woman deliberately attempted to mislead me; even had she attempted to make misleading statements, there is no question but that the symptoms of which she claimed she was suffering were anything but purely imaginary and having no basis so far as being the result of the injury to her tooth. This type of case is probably the most difficult type of malingering which the physician has to contend with since it is not wilfull. To be sure there are certain injuries which cause acute nervous and other disorders as a result thereof. It therefore behooves the examining physicial to make an extremely cautious and careful diagnosis when he believes he is confronted with such a situation.

We finally come to the last and most important type of malingering namely, those cases in which there are no injuries and in which the condition is deliberately and wilfully faked, such as the case of the falling sign of which I spoke before.

In the course of my experience in making medico-legal examinations I have had occasion to make many examinations for a company manufacturing ice cream, on claims against this company for foreign substances in their products. These substances ranged from nails to mice, not excluding ptomaine poisoning and I believe I can honestly say, that at least 50 per cent of them were purely fictitious cases, in which there was absolutely no foundation for instituting action. The usual case of this kind is one in which the claimant states that she took into her mouth a foreign substance found in the ice cream, which scratched her throat and did any amount of serious injury to the tongue and lips, before she was able to remove it from her mouth. She invariably calls her physician who, after the usual treatment, places her in bed, where she remains for varying periods, extending from one day to three weeks. In one case tried recently, if the physician had treated the patient with the caustic in the way he described on the witness stand, said treatment having been used for the control of the alleged hemorrhage from the pharynx following a cut by glass, there is no question but that the application of this chemical in this way would have entirely eroded the tissues so treated with dire result.

The average injury, if any, caused by foreign sub-

stances in the mouth, such as for example glass, would obviously not take as much time to heal as it takes the throat to heal after a tonsil operation. After the average case of tonsillectomy, the patient will eat, surely within a week and have soon entirely forgotten that he had been operated upon. I can cite the case of a boy who had a tonsil operation, and three days later, was given some ice cream, in which his father stated there was a bent rusty pin, which the boy had accidentally taken into his mouth. After spitting out the pin, a severe hemorrhage ensued, necessitating an emergency treatment by two doctors. A throat condition is alleged to have ensued in which it was necessary that the child be treated twice daily for a month, once a day for two months, and the child discharged as improved after a period of about four months of active treatment. During this period it was stated that the child was unable to eat any solid food.

Another interesting case, very similar in a way to this, was where a well developed and healthy young girl of about eighteen years, bit into a piece of bread and noticed a peculiar formation which proved to be a worm. She immediately removed from her mouth that portion of the bread which contained the first half of the worm and became violently ill, calling her physician who, she stated, washed her stomach, notwithstanding the fact that she had had several attacks of vomiting before his arrival. Now, in the first place, this girl had not swallowed any portion of the bread in which the worm had been concealed. Had she done so, it is inconceivable to imagine, even under the widest stretch of the imagination, that such a substance could produce such violent symptoms, which were afterwards diagnosed as ptomaine poisoning. It is interesting to note in this case that on a leading question to this girl as to how her stomach was washed that she had not the faintest idea as to what that procedure was. Anybody who has had their stomach washed does not forget that experience. She too was home in bed for a long time.

A concluding and amusing case along this line was one in which two young men stated that after having each partaken of a Charlotte russe, that by reason of a peculiar gasoline taste and odor, they became violently ill, and as a result thereof, were forced to remain in bed three weeks. Upon cross examination it developed that they had eaten a hearty breakfast and had partaken of the Charlotte russes ten minutes after that and each had, immediately after having eaten the Charlotte russe, had two ice cream sodas. When they were asked why they took two sodas each, they stated that they did it to make them feel better and take away the gasoline taste.

These acions which were brought for $1000 each were dismissed.

In conclusion permit me to say that in my opinion the medico-legal examining physician should neither magnify nor minimize the condition which he finds, and should conscientiously strive to make an honest report of his findings to the court. He should not allow himself to be swayed by pecuniary or sympathetic motives. I firmly believe that the majority of the physicians conducting such examinations try to be fair and honest to the plaintiff and the defendant in the rendering of opinion. Those few physicians who do not do so, are very much in the minority. The best interests of the defendant is subserved by having a physician testify who will convince the Court that what he says can be entirely believed. Very often we find large verdicts rendered against defendants because juries, first doubting the veracity of the testimony given by the physician, in turn, begin to doubt the truth of the testimony given by any of the other witnesses for the defense.

Therefore, although justice seems to be blind, in the majority of cases she seems to have an inner vision which perceives all and everything.

Discussion

Dr. John D. Coghlan: I would like to add something to what has been said on the subject of malingering. The Standard Dictionary defines malingering as "feigning sickness to escape doing work." A few weeks ago an Italian came to me for treatment for a laceration of the head. On his third visit he complained of headache, stiffness of the neck and pain. After I dressed the wound I said to him, "What more do you want? You get $14 a day, you are through with your work at half past four o'clock, and you are much better off than many doctors. Don't you want to work?" He smiled, spoke better English than he had before, and with two more visits he was cured.

Less than two weeks ago an Italian who does cleaning for the same corporation, while doing her work got a writing pen stuck in her finger and two days later complained of pain in the finger at nine in the morning and they sent her to me for treatment as I am the physician for the corporation as well as physician for the company that insures its employees. She showed up at 4:00 o'clock that afternoon with a friend, I opened the finger under an anesthetic, and she seemed all right. That evening about 8:30 her friend telephoned me to go to her house as she had chills, fever and sweats. I found none of these symptoms on examination. She offered me money and Italian wine which I refused. She wanted a rest of two or three weeks with pay. The next morning the corporation received a letter from an Italian priest in which he stated that she had a very sore finger, a lump under her arm and that probably the finger would have to be removed. I notified the insurance company that it was a case of malingering.

This is a fair illustration of what insurance companies have to put up with to-day and it should not be encouraged.

Dr. L. W. Zwisohn: I want to speak from the viewpoint of the family physician. The excellent paper we have heard is very good but the writer, like so many others, puts the blame for malingering on the medical men. We all know that there is sometimes malingering, but why blame the doctors? The writer of the paper cites a case in which a woman swallowed glass and had attacks of vomiting and the doctor for the company who examined her found she was pregnant and blamed the vomiting on that. The fact is that many pregnant women never have attacks of vomiting. In another case of the man who claimed to have been struck and injured by a falling sign puts the blame on the medical men. The next point I wish to make is to applaud the advice that the attending physician of the claimant be present during the examination by the insurance doctor, but from my experience this is a difficult thing to do. The insurance company's doctor always insists on seeing the patient alone and then, instead of acting as a medical man and conducting a medical examination, he acts as a detective and endeavors to catch the patient making false statements by the number or kind of questions he asks. In one case that I know of a servant girl fell downstairs, two days later developed symptoms was sent to the country and there operated on. The insurance physician said she had been operated on for appendicitis which accounted for her symptoms and had nothing to do with her accident. I was asked to find out what was the nature of the operation she had undergone and on searching the hospital records found she had been operated on for a ruptured hematoma, the rupture having undoubtedly been due to her fall. She received a large verdict. In this case the defendant's physician had not made any examination at all.

Dr. Harry G. Goldman: Malingering is very prevalent and the layman has the impression generally that the fault lies with the physician whereas, as a matter of fact, the fault lies with the lawyers. There is a law firm in this city who have a room set aside where for some time before a trial, the complainant is drilled carefully and directed how to act before the jury. In one case, after drilling the patient for four or five weeks the lawyers themselves were impressed with the belief that he had a serious illness when, in reality, he was malingering, but so skillfully that he deceived his own lawyers. But they are not often deceived and frequently make false claims for their client with open eyes. William Travers Jerome, in speaking of such cases, said he was convinced that it was the fault of the legal profession that such claims were brought before the courts. Last week before a referee at the Workman's Compensation Bureau I heard the claimant's lawyers attempt to connect the death of a man from peptic ulcer with an injury, using the testimony of laymen. There was no medical man on their side in the case at all. The responsibility is entirely with the legal profession although the laymen have the impression that the medical profession is at fault. It is a pity that the public is not enlightened on this point.

Axel Josephsson, Esq.: I have listened with great interest to the discussion of how doctors should act in examining insured cases, and to the accusations against the legal profession, and I

should like to express my opinion on this subject. I do not often appear before the Compensation Commission but I had occasion to do so a few days ago and was surprised to find that there are certain doctors employed by the insurance carriers who will swear to facts that are not true. As a rule the workman is not represented by an attorney, but I was called in on this case when the Compensation Commission and the carrier insurance had decided the claimant was not entitled to further compensation. The man fell last June from the roof of a three story building and lit on his feet and, surprisingly, walked away. He suffered from shock and two doctors from the insurance carrier treated him for six months. Last September a third doctor for the carrier examined him and testified that he gave him "a complete mental examination" and found nothing wrong with him physically. No *x*-rays were considered necessary by him because the man was not unconscious after his fall and none were taken. This doctor wrote a three page letter to the insurance company which was accepted in evidence, although it did not give any diagnosis. He testified that he examined him on the 31st of December and found nothing wrong with him. He examined him again on the 19th of April this year and found nothing wrong. On the 28th of April the man was examined by a physician associated with the Neurological Hospital, who found a very severe case of nervous trouble and who testified to the reactions which proved it. The insurance carrier insisted that the evidence of their doctor must be accepted. There had been no one there to cross-examine their last doctor when he took the stand the first time. I did the second time and the Commissioner ordered the insurance carrier to resume paying compensation from last February when it had been stopped by order of the Commission on the application of the insurance carrier. I believe that the State should provide a lawyer to represent every one who has a claim before the commission and the carrier's physician should be cross-examined by this lawyer. From what I saw I consider it a disgrace to the medical profession that doctors employed by insurance carriers go on the stand and swear to things they may do before the Compensation Commission.

Dr. S. Greenfield: The question of malingering is very interesting. I represent one of the largest real estate owners' associations which insures their houses and I have reason to know something about it for I am in court very often. I don't blame the legal profession at all; they have to make their living and they do what they can to win their cases in court, but I put the blame on the medical man. Here is a case of a woman sitting at a table and a piece of plaster about two inches long by two inches wide falls and hits the table, not touching her at all, but frightening her. On the fourth day after the accident I found her in bed in the care of her physician, a foot rigidly thrown up, hysterical and unable apparently to speak. There were no signs of injury and I reported the case to be one of hysteria. The case was carried to the Supreme Court and the plaintiff's physicians numbered among them practically every specialist in the medical profession, a neurologist, a gynecologist, a pediatrist, etc., etc. I was the only physician in court for the defendant. It was a very interesting case. The association I represent insures about 27,000 houses and we have an accident every five minutes. The medical testimony was to the effect that they had made every examination and a physician testified he had done an operation three years before for pan-hysterectomy and all these symptoms were due to that. I declared to the people I represent that this was a case of hysteria and that it would clear up as soon as the case was finished. She was brought into court on a stretcher with two nurses in attendance and as she had been instructed to scream whenever her arm was touched she screamed convincingly at intervals and frightened everybody, including the jury. My own people even doubted that I was correct in my diagnosis and she received a substantial verdict. But it was not payable at once and we had her watched and six months later she was discovered walking on the street carrying a big bag of potatoes and it was found she was doing all her own housework, including scrubbing. An appeal was taken, these facts were brought out as evidence and it was declared to be a case of malingering.

The number of cases of malingering in this city at the present time are due to a decision handed down three years ago by Judge Cordova when he said the owner of a building is liable for anything that happens in it from falling walls down to a rat hole. We have had all those cases. If I were to cite all the cases of malingering we have proven you would all be asleep long before I had finished. We had one case in which a woman wearing artificial hair four inches thick was struck on the head by half a brick. There was no wound, but she claimed she had pain, could not hear and was dizzy. Cases of malingerers claiming deafness are very common; I have examined as many as 200 in one month. I carry half dollars around in my pocket and can usually catch them turning around to look at it when I drop one on a resounding surface behind them in the presence of a witness. I have done it in court and proved they could hear. We have a case of malingering every three minutes, usually headache and earache, sometimes running ear, and they all have physicians to testify to their claims. A woman came to me and said she had a miscarriage and two physicians testified they made an examination, found a dead fetus and curetted and it was proven later that the patient was away in the country at the time they said this operation was performed. The trouble is not with the lawyers; it is with the physicians and these claims of malingers will continue to come to court as long as physicians will continue to lend themselves to the practice of testifying to the presence of diseases and injuries, in insurable cases, when they know they are testifying falsely.

Dr. G. Alfred Lawrence: I think that often in these cases the physical symptoms are magnified and the psychic states are not considered as much as they should be. Traumatic neurasthenia is a very important condition. These psychic states sometimes last for many years and may be more serious than the accompanying and evident physical conditions. I have a young woman thirty years of age now under observation who when a girl of fourteen was sent to a hospital for medical treatment and was so terrified at the time, because she was afraid she was going to die, that she experienced such a profound psychic shock that she has never recovered from it. She cannot bring herself to go out, is afraid to cross the street and cannot carry on the normal activities of a young woman's life. She is at times in such a marked state of mental depression that she even contemplates suicide. Such a condition as this might result from a trifling physical accident and the possibility of these psychic states ought to be taken into consideration by lawyers as well as physicians. We must not consider all these conditions as purely malingering, for they are often psychic states for which the victim is clearly entitled to compensation.

Dr. Herman Goodman: It seems to me that many people are very happy if it can be proven that a claimant has had lues as this will account for every symptom that may afterward manifest itself in the unfortunate person who has had it. I have never tried a case in court, but I have had patients who have had syphilis. In two of these cases they might have had it well into old age without showing any manifestations, but in one case paresis and in the other tabes developed as a result of accidents. In one case the man was a chauffeur and he was driving his car in perfect possession of all his faculties when in order to avoid running over someone he was compelled to drive his car on the sidewalk and into a stone ledge. From the moment of the shock of impact he was thereafter unable to move his legs, a perfect case of classic tabes. If he had been a tabetic before the accident he could not have driven his car, but he was one undoubtedly after the accident. But the fact that he was a syphilitic would have influenced adversely any legal action he might have brought for damages.

Judge George E. Crothers, of San Francisco (By invitation): I came here this evening at the invitation of Dr. G. Alfred Lawrence, who knew I have been investigating matters like this for the life insurance companies in California. The legal and the medical professions are both represented in my family so I have no feeling of blame for either profession, as regards this question of malingering, for the exploitation of injustice. This subject of health insurance originated in England and experiments there showed that as the weekly benefits increased the proportional sickness increased in geometric ratio. I have been amazed at the generosity of the insurance companies in this city in their treatment of disability. They allow it in hundreds of cases not called for by their policies. This, of course, means that the rate must necessarily be increased, for the companies are losing money. The rates have gone up 300 per cent and still there is a loss. If malingering could be prevented the rates could go back to where they started. Next in value and importancee to the workman's compensation comes the total disability insurance—two wonderful services and my only criticism of them is that they should be more practical and careful in their selection of risks, particularly in regard to previous personal and family history. Otherwise the ordinary and everyday man will be overcharged to pay for unnecessary losses. I am going away to-morrow with a great admiration for these companies, but I do feel that their policies should express their practices, because a policy should not be written one way and interpreted another.

Mr. Spiletta: As a guest also of this Society, I trust I may be permitted to say a few words. I know of one case in which a claim was made for a large amount for damages suffered in connection with a hair dye. A woman claimed she had gone to a beauty doctor and had her hair dyed and subsequently suffered from a severe skin eruption and the question was to establish the cause of the injury. It was strongly suspected to be a case of malingering, but it was difficult for the attorney for the defense to demolish the case notwithstanding this suspicion, for it was possible that the woman had a predisposition, or susceptibility to some substance contained in the hair dye. If the attorney for the defense could have established that there would have been no liability involved. The question was asked if the plaintiff had ever previously suffered from a similar injury and the reply was no. The same reply was made when the question was asked a second time, a third, fourth and fifth time and she finally admitted that she had this skin eruption before while employed in a large department store. It was then proven that she had sued for

(Concluded on page 94)

Mild Diabetes and Its Possible Cure

GEORGE H. TUTTLE, A.B., M.D. (Harvard)
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Diabetes, in its beginnings, represents only slight variations in the functions of the sugar machinery of the individual, which for years may correct themselves, without producing any lasting condition of derangement worthy of being called a disease, and, up to a certain point, this restoration of the power of the sugar machinery is possible, and to that extent diabetes is certainly curable. It is not sufficiently realized by those who treat only severe hospital cases of chronic diabetes, complicated with acidosis and threatened coma, how great the possibilities of cure are in the thousands of mild cases which never reach a hospital. These cases belong by right to those general practitioners who have special ability in the treatment of such patients. When such cases go to the hospital they receive misleading advice. They are told that their type of ailment is very mild, that they need no insulin, that if they will be a little careful of their diet for a while and keep sugar-free by their tests, that they need not worry about themselves. They are invited to come into the hospital once in a while, or to the specialist's office. These patients, unimpressed with the seriousness of the disease, go to their homes, keep to the somewhat restricted diet which makes their tests sugar-free always, for a few weeks, and then gradually lapse from the diet and the tests with the idea that they are all right. A few months or a year later the patient again appears at the hospital with 2 per cent. sugar and slight acidosis. He is treated for a week and again sent home on a slightly restricted diet, perhaps a little insulin, with the assurance that he is a mild case; that he is doing well; nothing to worry about, but must be a little careful about diet, etc. And so it goes, regular trips to the hospital about so often, tolerance falling a little every time, and patient gradually losing confidence in doctors, hospitals and diabetic treatment in general. Final result is that none of these cases are ever cured. Yet most of them could be cured under proper treatment.

Of course, we cannot guarantee that a person who has recovered from one attack of diabetes will not ever have another attack (as pneumonia), because the sugar machinery of the body continues to run during life and it may be thrown out of gear again either by the same or different causes. On the other hand, nobody can be sure that this will occur, and so mild diabetes should be considered as attacks of diabetes and not as a continuous disease, and we have no right to say "once diabetic always diabetic" or to say there is "no cure for diabetes." That has not been proven, and the only evidence that such is the case is based upon cases, treated under the Allen system before insulin came into use, which had no chance of being cured. Such evidence is obsolete and proves nothing either way so far as mild diabetes is concerned. New evidence has been accumulating during the last four years, mostly by private physicians, generally unconnected with hospitals, who, although not specialists, have acquired an art of treating diabetic cases, especially the mild and moderate ones, with and without the assistance of insulin and other therapeutic aids of their own devising, which has not been given its proper weight in deciding whether diabetes can be cured or not. Perhaps this is because such physicians have not presented the evidence. Perhaps it is because they feel that the extreme, conservative opinion founded upon the facts of pre-insulin days, under the regime of Allen's starvation treatment, and the doctrine that under-nutrition increases tolerance, is so firmly entrenched in the hospitals owing to the teachings of the leaders upon this subject, that it would be useless to affirm the new position which some clinicians hold, namely:

1. That mild diabetes is a functional disease without permanent anatomical lesions.
2. That in the majority of cases of mild diabetes the lowered function of the pancreas in the production of insulin may be restored to the physiological state, not by continuous under-nutrition, but by the gradual increase of carbohydrate food, used as a stimulus to encourage the development of the Islands of Langerhans, as muscles develop by the stimulus of use.
3. That this result may be accomplished by the aid of other therapeutic agents besides insulin.

The Disease Itself

Since we all have a sugar-metabolizing machine, which may change from a physiological to a pathological state at any time, we are all potential diabetics, and in those who have inherited an apparatus of low functioning power, the possibilities are much greater. Yet the change usually comes so gradually, and automatic restoration to the normal occurs so often, that one never knows definitely on which side of the dividing line the function of the pancreas lies. In fact the vast majority, perhaps all, cases of diabetes are first recognized as Subacute Diabetes. This subacute diabetic ground structure may exist much more widely than we know and as it is entirely free from symptoms, nobody realizes its existence. Yet when an influenza or other contagious or infectious disease attacks us, or some of the functions of the other endocrine glands become abnormal, this subacute state flares up into so-called Acute Diabetes. In the same way, this subacute state developing slowly through years, made worse by indiscretions of diet, slight illnesses, infection, run down conditions, overwork, worries, grief, in short everything causing wear and tear on the general bodily functions, including those of the pancreas, gradually passes into a chronic state in which the powers of degeneration of the Islands of Langerhans become greater than the powers of regeneration, and the tolerance gradually falls even to zero. This is chronic diabetes and is obviously hopeless of cure. I believe that Acute and Subacute Diabetes are curable and that Chronic Diabetes is incurable. A steadily falling tolerance on a natural diet without insulin, enables us to distinguish Chronic Diabetes. Where complications, which may or may not be susceptible of cure or removal from the scene, accelerate this falling tolerance, the general principles as applied to diabetes remain the same, although modified by the complications.

We have therefore three diabetic conditions, the Acute, Subacute and Chronic. Of these it is believed on a very liberal estimate, that 10 per cent. are chronic, 25 per cent. moderately acute, and 65 per cent. mildly subacute cases of all diabetes. A leading manufacturer estimates that 25 per cent. at most will ever use insulin.

Modern Treatment

Since it is believed that at most only 25 per cent. of diabetics will ever use insulin except temporarily in emergencies, or to aid them to do more work, it becomes necessary to devise new methods and remedies in an attempt to cure the other 75 per cent., which shall be more

effective than the pre-insulin methods of under-nutrition, etc. Scientific dieting has been developed so thoroughly that in it we have a reliable weapon to aid us, and without it nothing else would avail. But diet may be used to build up as well as to starve one, and the former tendency will prevail, I believe, in the future.

But in addition we must have other aids, since dieting alone has not succeeded. In offering the following suggestion I am simply stating the results of my own experience in the treatment of about 200 cases during six years, before and since insulin came into use in private practice, without consultation with hospital specialists, but with a full knowledge of the methods of Joslin, Allen, Labbe, Petren, Newburgh and Marsh and others. I do this also in the hope of making other men realize that these 75 per cent. of mild diabetics ought to be cured instead of being allowed to progress into the fatal class of Chronic Diabetics, and that some means besides those at present used should be devised and tried out. I propose the following method of treatment for all cases of mild or moderately severe Diabetes, it being understood that insulin is used temporarily when needed.

The method consists in the continuous use for months of the Metchnikoff Culture of the Bulgarian Bacillus, with a modified use of scientific dieting, together with the therapeutic aid of organic iron, phosphorus and arsenic.

The Metchnikoff Culture was first produced for the profession under his personal supervision and remains today the standard for use. I have used large quantities of it for more than six years in the treatment of diabetes. Its known effects are to change the flora of the intestines, preventing the development of toxins therein and curing constipation, so common in diabetics. A general improvement of the whole digestive system follows its use. I doubt if it has any direct effect upon the digestion of carbohydrates. However, the improvement of digestion, the prevention of toxemia, and the cure of the constipation, have a general effect upon the body as a whole, and help raise the lowered condition of the pancreas. In our attempt to effect a cure in these mild cases of diabetes we have two objects in view:

1. To make the pancreas secrete more native insulin.
2. To repair the ravages of the disease.

Of course the injection of animal insulin does not make the pancreas produce more native insulin, nor has any drug or other agent up to the present time been known to produce that effect. But in a large number of cases, observed for months and years, I have found that the tolerance slowly rises even up to 250 gm. carbohydrate tolerance in some cases under the continuous administration of Bulgarian Bacillus, aided by the tonic effect of organic iron or phosphorus with Fowler's Solution alternately in two-week periods. The effect of these remedies of course must be indirect, and the general improvement likewise includes improvement of the pancreas, making the pancreas produce more insulin as shown by the increasing tolerance. Also the improvement results in an increase of weight in emaciated diabetics, whereas in the obese a reduction to the normal is gradually secured by keeping the diet considerably below the requirements.

Modified dieting is necessary also for mild diabetics, if we hope to keep them long enough as patients to cure them. There is no need for instance of restricting them on meat, fish or eggs, since as they are usually active and otherwise healthy, the amount of protein which their natural appetite urges them to eat is used up in repairing the tissue wastes which their activities cause daily. Also since their carbohydrate tolerance is fairly high they may be given small amounts of fairly strong carbohydrate food which would be ridiculous for severe diabetics. A little bread, a little oatmeal, and plenty of 5 per cent. vegetables, but no potatoes until later, with plenty of butter and bacon, will make them much more contented and willing to continue treatment within their diet, than to try to keep them on the cream, orange juice, bran muffins, etc., of the severe diabetic. I have used a different method of dieting also, in starting a case, than is used at the hospitals, and I find it more satisfactory to the patient and more easily used by the general practitioner, and the records of the cases appended will show that at the end of 4 or 5 weeks we have reached our goal of sugar-free, with an increased tolerance, and a patient who knows he is getting better and who is willing to stay with you until you have time to finish the job. This is the chief thing of all—the confidence of the patient—and is well worth waiting four weeks for, in order to get sugar-free, during which time the state of mind changes from gloom to hopeful expectation of cure.

The dietetic treatment is divided into two stages:

1. To get sugar-free.
2. To raise tolerance.

In an usual case, which I have decided is mild from the fact that there is no acidosis although much glycosuria, or in a case with slight acidosis which yields easily to a reduction of fats in the diet after a week's treatment, I prescribe the following diet for a week:

45 Gms. White or other bread
45 Gms. Quaker Oats dry
Meat and fish, moderate amounts twice daily
Eggs—*Ad libitum.*
Butter—*Ad libitum*—Bacon
5 per cent. Vegetables—Ad. Lib.
Use string beans instead of potatoes
Coffee, Tea, Saccharin
Agar Jelly flavored
Milk enough for oatmeal and Agar Jelly.

This diet will produce from one-half per cent. to 3 per cent. sugar in most mild diabetics at the end of a week. Meanwhile patient takes B. B. morning and night regularly. At the end of week record the sugar percentage and continue same diet for another week. A fall in the sugar per cent. will be found each succeeding week as shown in following cases, which are typical of others.

	1st wk.	2d wk.	3d wk.	4th wk.	5th wk.
Test Diet ..	4%	2½%	1½%	½%	0
" " ..	1½%	½%	0		
" " ..	3%	2%	1%	0	

Sugar percentages gradually reduced to 0-sugar-free.

When the patient is sugar-free the first period of treatment is ended and by taking account of stock we find that the patient in Case 1 who was passing 4 per cent. of sugar is now excreting no sugar *on the same diet.* Now there is no known way in which this could happen except for the pancreas to produce more insulin and so I conclude that the treatment has made it produce more native insulin. And isn't that what we want to do? Isn't that the only way in which we can hope to cure diabetes? Never mind how, or why, or by what means. *It does it.*

And now we begin the second stage of treatment in which we try to raise the tolerance as high as possible by the gradual addition of carbohydrate food; and here I will call attention to the fact that the carbohydrates used during the first period were all starches and no sugars, fruits having been excluded. This is done because starches change very slowly to sugars during digestion and as absorption is slow the blood sugar has no sudden rise and consequently the pancreas does not have to undergo sudden strains in producing insulin to meet the blood sugar rise. We retain the test diet as a permanent

foundation diet to which the patient may return at any time to free himself from sugar should his tolerance fall through some intercurrent illness as a cold, ulcerated tooth, etc., etc. To the foundation diet we add first one medium size potato. If when the patient appears at the end of a week we find him sugar-free, add another potato and another the next week until he metabolizes, without showing sugar, three medium sized potatoes. On the other hand if he shows sugar after the first potato, continue that another week, and still another week, until he does come sugar free. Then add another potato and so on. This is upon the theory, proved by experience, that the stimulus of small amounts of carbohydrate food will cause an increase of the function of the Islands of Langerhans, and an increased production of insulin. The further treatment of this period, after three potatoes have been handled successfully by the patient, is to add two teaspoonfuls of clear sugar from the sugar bowl to the previous diet, and keep him on that until he becomes sugar-free. Then add 3 and 4 and 6 teaspoonfuls of sugar until you have raised the tolerance as far as 6 spoonfuls of sugar. Many will not care to go so far. Now arrange a common sense diet of sweet foods on this basis or still better below it, by substituting common articles of food for teaspoonfuls of sugar. Extreme accuracy is not required for mild diabetics. By our treatment we have already established a large tolerance, differing in each case, of course, and have thus fulfilled the first requirement of treatment, that of making the pancreas produce more insulin. As a result of this increased nutrition, and by the aid of organic iron and phosphorus and arsenic tonics, we accomplish the second requirement and repair the previous ravages of the disease. This method has proved perfectly satisfactory for six years in practically all cases of mild diabetes who have never had acidosis. In some cases of moderate diabetes with acidosis, a preliminary treatment for a few weeks with small amounts of insulin reduces the moderate cases to the mild form and then this method restores them to normal. Where insulin has to be given I find that the insulin may be taken away gradually, say two units per week, as this reduction has the same effect, in stimulating the pancreas, as does the addition of small amounts of carbohydrate food in the other method. Most of my cases continued sugar-free for years after treatment, excepting:

1. Those who deliberately cut free from all rules.
2. Those temporarily affected by complications of a minor nature.
3. Those permanently affected by the serious complications of severe diabetes.

Conclusions

Diabetes is not a fixed disease at all in the earlier stages, since it consists only of slight variations of the normal sugar machinery; without permanent anatomical changes, and does not become a fixed disease, until acidosis is firmly established in its chronic stages.

Mild cases represent 75 per cent. of all diabetics. Most of whom never go to the hospital during the early stages. I believe that too much attention and money is wasted upon the hopeless severe hospital cases, while the 75 per cent. mild diabetics who could be easily cured, gradually progress into worse conditions, and keep up the supply of severe diabetics and coma deaths.

An attack of mild diabetes can be cured as thoroughly as an attack of pneumonia. Chronic diabetes is incurable. Gradual additions of carbohydrate food stimulate the Islands of Langerhans to produce more insulin, whereas undernutrition and exogenous insulin merely rest them without causing increased production.

Special Tonsillectomy Scissors

(Concluded from page 78)

For progressive dissection, to discover small peritonsillar pus accumulations, the tissues about the upper pole of the tonsil should be carefully infiltrated.

In developing a submucous endocapsular tonsillectomy technic several years ago, I designed several types of scissors. One type, in particular, I have found especially useful in opening peritonsillar abscesses. These scissors are 20 C. M. in length, but the blades are very short, and bent by a short full curve so that the cutting edge is at right angle to the line of the handles. Lying flat the points are fifteen mm. above the plane surface, and the length of the cutting edge at right angles to the handles is ten mm. The blades are only four mm. in width, and come to a sharp point with a cutting edge along the outer margin near the point.

When pressed into the tonsil near the margin of the anterior pillar, the closed instrument penetrates readily. The first step in the dissection should be the separation of the anterior pillar from the upper one-third of the tonsil. This is effected by merely inserting the closed scissors and opening them. If the separation is not complete enough by upward or downward pressure, the incision is extended without removing the instrument.

In all tonsil surgery, the patient should be required to pant. The tongue will then be down; good vision is possible without a tongue depressor. The tonsil should not be grasped with forceps and drawn upon, as this usually causes gagging.

If pus is seen oozing from the first incision, operation can be discontinued or the upper pole of the tonsil more fully loosened. The second step is to rotate the scissors, now closed, causing the points to pass under the upper pole of the tonsil. The instrument is again opened, and the area beneath the upper pole of the tonsil detached from the tonsil. If pus is found, the posterior pillar should be detached, continuing the the use of the scissors.

Should pus be found under the upper one-third of the tonsil, it is perhaps advisable in all cases to clip off the detached segment. To do this without loss of the segment, the portion to be excised should first be grasped with tonsil forceps.

When pus is not found under the upper pole of the tonsil it is a simple matter, by dissection, to continue loosening the tonsil and to excise it. Some further infiltration may be needed, but the steps which have been taken are but the first steps of an effective tonsil enucleation.

Many tonsil scissors are available. It is my experience there is entirely too much blade to tonsil scissors; one appreciates this in peritonsillar abscess cases because here often the patient cannot open the mouth well. Half curved blades and nearly straight blades can only be used effectually by markedly dislocating the tonsil and it is hard to control the patient if strong traction is made upon the tonsil.

When the operator is careful to secure effective analgesia, good position of the patient, and proper breathing, deliberate and precise dissections can be done. This is a decided protection to the patient, making it possible to operate without damaging important palatal structures or causing severe bleeding from inadvertently cutting too deeply into the pharyngeal structures.

Summary

The advantages of the plan of surgical attack are:

1. Operative interference may be instituted within twenty-four hours after onset of infection.

2. The surgeon prepares to progress in the attack to the point where pus is found or complete tonsillectomy effected.

Photos by Underwood and Underwood.

President of American College of Surgeons

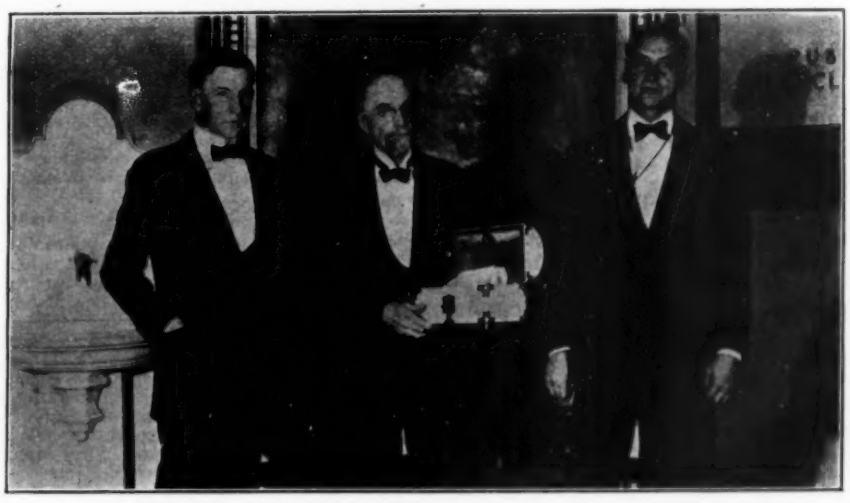
An especially posed portrait of Dr. George David Stewart of New York City, president-elect of the American College of Surgeons. THE MEDICAL TIMES congratulates Dr. Stewart upon this latest of his many laurels, the richly deserved gifts of an admiring profession.

Dr. Charles H. Mayo, Famous Surgeon

An especially posed portrait of Dr. Charles H. Mayo of Rochester, Minnesota, world famous surgeon. Dr. Mayo's position in the medical profession is an enviable combination of master artist and trusted counsellor. A great surgeon and a great citizen.

Dr. Simon Flexner

Animal experimentation is given credit for the added twelve years of life enjoyed by man of the present generation, by Dr. Simon Flexner, chairman of the Public Health Council of the New York State Department of Health, and head of the Rockefeller Institute for Medical Research.



Chevalier Jackson

Distinguished Physician, Dr. Chevalier Jackson, Receives Bok prize of $10,000 *and Gold Medal.*

Philadelphia, Pa.—Dr. Chevalier Jackson, distinguished physician and professor of bronchoscopy and esophagoscopy at the Jefferson Medical College, won the Philadelphia Award for 1927. Edward W. Bok is the founder of the award, which provides a $200,000 trust fund from which the annual interest of $10,000, together with the gold medal is conferred upon "that man or woman who advances the best interests of Philadelphia.

Photo shows: Left to right, Vice-President Dawes, Dr. Jackson with the award and U. S. Senator George Wharton Pepper from Pennsylvania.

3. Multiplicity of instruments is avoided.

4. Scissors dissections are less likely to extend inadvertently into important pharyngeal or palatal structures.

5. When the upper pole of the tonsil only is excised, complete tonsillectomy should be practiced after a lapse of from two to four weeks, this time being allowed to permit subsidence of inflammation.

The Bottle-Fed Baby

(Concluded from page 84)

all their lactic acid milk on account of the safety of this milk, as well as the double check in breaking up the curd.

CONCLUSIONS

1. Never sacrifice breast milk for any kind of bottle milk feedings to baby under one year of age, provided the infant is getting the desired results.
2. Do not hesitate to give complemental feedings of milk to a baby when the breast milk is not proving adequate.
3. Do not hesitate to wean a baby from the breast at any time when it has been established that the milk is injurious to baby.
4. In complemental feedings with the breast, or when infant is completely weaned, use the safest milk possible with a relatively low butter fat in order to safeguard against fatty indigestion.
5. When giving lactic acid milk, remember that lactic acid does not within itself convert impure into safe milk. It only breaks up the curd and favors digestion, therefore a 12 per cent dry milk will not only make an ideal basis for lactic acid milk, but will add an element of safety in the milk used for infant feeding.

Colostomy

(Concluded from page 80)

colostomy and particularly so if much opiate has been used. A laxative or injection through the abdominal anus may be necessary, but as a rule, after the first evacuation, the bowels move satisfactorily. The patients soon learn to recognize before hand when the bowel is about to empty itself. The habitual use of intestinal antiseptics is recommended to render the evacuations practically odorless.

Closure of the Colostomy Opening

When the temporary colostomy is no longer needed Tuttle directs that the little triangular flaps in the upper segment, which curl up and become adherent in their peritoneal layers, be unrolled by carefully breaking up these adhesions with dull instruments. Their edges are then freshened, together with that of the lower transverse flap, and the T-shaped wound in the gut is then brought together by a row of fine continuous Lembert sutures. In handling these delicate flaps it is essential that the sutures be exactly placed. The muscularis coat is the portion of the bowel wall that affords anchorage for the stitch and the mucosa should not be included. The needle enters the flap at an obtuse angle until it just pierces the muscularis, when the point is sharply lifted and with it the fold of bowel wall which it has impaled. The needle is then pushed through the opposite side of the fold and the suture drawn tight. An accurate approximation is facilitated by always picking up folds of equal length. The needle should never be passed through until the fold is lifted on the needle.

The stitches are placed about one-eighth inch from the freshened cut edge, and when drawn up, roll in the edges, and perfectly approximate the serous surfaces. After placing and tying the first stitch the suture is carried diagonally across the wound to enter the bowel one-eighth inch further along, parallel with the first. After each stitch the suture should be drawn tight, and to prevent cutting out the pull should be made parallel to the wound, exactly in the direction of the last stitch taken. After the last stitch has been placed the thread is picked up at the point of its last crossing between the exit of the next to the last and the entrance of the last stitch. The thread is pulled out here in a loop, long enough for convenient tying, and knotted with the single thread which has just emerged from the hole of exit of the last stitch. Both arms of the loop must be separately pulled tight to set the knot. At the point where the longitudinal and transverse sutures meet a mattress stitch should be placed. Over this first layer of sutures a second row reaching back a little farther should be placed to support the free edge. The bowel is now closed, and any bleeding controlled with hot compresses which may be removed after a few minutes pressure, as the hemorrhage usually ceases. The edges in the gut are now wiped clean with an alcohol swab.

The bowel is next dissected loose from its attachment to the scar tissue down to the peritoneum. This layer is carefully stripped from the abdominal wall for about an inch all about the opening. This loosened peritoneum allows the bowel to drop into a pocket below the level of the abdominal wall and the rectus fascia and muscle may be closed over it. As Tuttle says, "By this method the gut is effectually closed with very slight, if any, diminution in its caliber, without opening the peritoneal cavity, and the abdominal wall is restored in all its thickness, which is a matter of considerable importance in the prevention of hernia."

Malingering as a Factor

(Concluded from page 89)

damages at that time and the case had been thrown out of court. I mention this to show the great difficulty of exposing malingering.

Dr. Loewe (closing): The courts always take into consideration the possibility of traumatic neuroses. This was mentioned in the paper. As to the question of a lawyer representing the claimant in compensation cases, I believe that is why the workman does not feel he will get a square deal. It would be a good idea to have the Commission arrange to have a lawyer take the part of the plaintiff. As to the question regarding vomiting in pregnancy, I can only say that one of the first things I learned in medical school was that vomiting is one of the cardinal signs of pregnancy, and I believe it is still so regarded by a great many physicians.

The Main Objects of Public Health Work

"The three main objects of public work are: (1) the prevention of disease; (2) the enhansement of health; (3) the cultivation of the complete being of man in order that physically, mentally and morally there may be the highest self-development of a well balanced nature."—*Sir Arthur Newsholme*

Misconceptions About Leprosy

There are some popular misconceptions about leprosy. One is that it is hereditary. The fallacy of this has been demonstrated by removing children from leprous parents immediately after birth. Under these conditions, the children practically always remain free from this infection. There is additional evidence against hereditary infection. Another erroneous impression is that the disease is racial in its affiliations, and that the members of the dark and brown races are far more susceptible than whites. It is true that the dark-skinned races do suffer most at the present time, but we must remember that there was a time in history when the white race suffered heavily and, given the same surroundings and the same opportunity for infection, there is reason to believe that all are about equally susceptible.

Half-Million Treatments Provided by Hospitals

A total of 1,321,309 hospital patient days were furnished by hospitals under the jurisdiction of the United States Public Health Service during the past fiscal year according to an oral announcement just made. These services were furnished in different parts of the United States, Alaska and in the insular possessions for treatment of merchant seamen and other beneficiaries of the services, it was pointed out.

In addition to the hospital patient days, there was rendered by these hospitals 572,139 "out-patient" treatments, and 91,553 physician examinations during the fiscal year. The number of lepers segregated at the National Leper Home at Carville, La., increased to 259, it was stated, and the Marine Hospital on Ellis Island continued to admit all sick and detained immigrants whose treatment was requested by the Department of Labor.

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Reflections on Transfusion

In certain circumstances transfusion is a great resource, but it is possible to abuse it.

Too much drawing of blood once upon a time brought deserved odium upon us; too much injection of blood may cause history to repeat itself; both these abuses represent the same type of error.

The indications for transfusion today are set down as any sudden blood loss, shock, carbon monoxide poisoning, chronic hemorrhagic diseases, dyscrasias, acute sepsis and subacute systematic bacterial infections, diabetic coma, "debility," delayed bleeding and clotting time in certain surgical patients, nephritis, eclampsia, burns, encephalitis, marasmus and intestinal toxemias of infants, pellagra, acne vulgaris, and tropical sprue.

Transfusion is now resorted to at times in the treatment of mastoiditis, sinus thrombosis, puerperal sepsis, empyema, various types of bacteriemia, pneumonia, typhoid fever, measles, diphtheria, and tuberculosis.

The old indications for bleeding also covered a wide range.

When John Keats, great English poet, had his first pulmonary hemorrhage, what happened is described by his friend Charles Armitage Brown: "I ran for a surgeon; my friend was bled; and, at five in the morning, I left him after he had been some time in a quiet sleep."

A modern critic, writing of the manner in which tuberculosis was treated in Keats's day, states that "If a patient had a hemorrhage, he was promptly bled, and his food reduced to a minimum [vegetable food only]. By this process of attrition the patient was so wasted that the hemorrhages, at least in the early stages of illness, were often temporarily diminished, whereat the doctor rejoiced and declared that his remedies were taking effect."

Miss Lowell, in her biography of Keats, says that "Keats was so extraordinarily vigorous a man that there is little doubt that, under the regime prescribed for tuberculosis patients today, he would have lived for many years, if not have recovered entirely. As it was, everything was done to kill him and nothing to cure."

The first bleeding of Keats was on February 3, 1820. On June 30 of the same year we read in a letter sent by one friend of Keats to another that "A blood vessel in his lungs broke last week and he has been under Dr. Darling's care ever since. By copious bleedings and active medicine the evil is at present reduced." On December 14 of the same year the friend who was nursing him [Severn] wrote: "I had seen him wake on the morning of this attack, and to all appearances he was going on merrily and had unusual good spirits—when in an instant a cough seized him and he vomited near two cupfuls of blood. In a moment I got Dr. Clarke, who saw the manner of it, and immediately took away about 8 ounces of blood from the arm—it was black and thick in the extreme. Keats was much alarmed and dejected—O what an awful day I had with him!—he rushed out of bed and said 'this day shall be my last'—and but for me most certainly it would. At the risk of losing his confidence I took every destroying means from his reach, nor let him be from my sight one minute. The blood broke forth again in like quantity the next morning—and the doctor thought it expedient to take away the like quantity of blood."

The end came on February 23, 1821. We have told only as much of his history of bleedings as is recorded; it may be surmised that there were unrecorded bleedings.

Without decrying in the least the efficacy of transfusion in certain circumstances (nor of bleeding in other circumstances past and present) we insist that there is a moral in our tale.

Motion Pictures in Medical Education

Dr. Joseph Franklin Montague makes the impressive point that a series of motion pictures showing all the interesting cases that have come through some department of a hospital like Bellevue over a period of years must exceed in educational value any other form of clinical study. He, for example, can show students and practitioners, in a little over an hour, all the important intestinal and rectal cases that have passed through Bellevue Hospital in the last nine years.

Why go to Vienna, or Rochester, if cases can be shown, instruments demonstrated, and every modern method revealed by means of moving pictures with such a saving in time and multiplication of volume?

The dissection of an entire human body—a tedious process taking months of careful work—is shown in faithful detail in Dr. Montague's motion pictures in a little over one hour.

Upon a screen one studies at ease what happens in an area six by nine feet, whereas in an amphitheatre or operating room one can see nothing so complete in its clearness and abundant in its detail.

The use of such a method should go far to solve the crying difficulties of the present medical school curriculum. Dr. Montague, we understand, is applying it in the Bellevue Hospital Medical College Clinic most successfully, but is handicapped by lack of funds. There can be little doubt that the entire system of education will eventually gravitate toward visual instruction.

As to the matter of education of the practitioner, the

value of the moving picture is incalculable; but the method is costly and those who would be most benefited somewhat blind as yet to the possibilities.

The Animal Menace in Cities

Dr. Clarence W. Lieb advocates the banishment from cities of dogs, horses, pigeons, rats and cats, on the ground of the undoubted health hazard which their presence occasions.

Even the animal lovers probably hold no briefs for the rats. Humane considerations should lead to endorsement of Dr. Lieb's plans for the horse. The pigeons are a nuisance, even if not a great health hazard. The cats are a considerable factor in transmitting contagion from house to house and are not vastly popular since they do not flatter their masters, like the dog.

Remains the dog, with the staunchest and most numerous friends, but with a bad sanitary record. Here, again, the humane argument should have great force, but it would seem to have none, since the so-called dog lovers themselves are the greatest offenders with respect to the cruel imposition of city life upon the dogs.

Dogs are responsible for a vast amount of filth tracked into habitations where there are young children. Moreover, much of such filth is derived from the feces of the dogs themselves, deposited everywhere, particularly on our sidewalks.

Why is it that so many apparently well bred women make it a point to have their dogs defecate upon the sidewalks? It furnishes a curious commentary upon our state of civilization. Here are esthetic as well as sanitary considerations to ponder over.

Dr. Lieb, of course, offers a counsel of perfection; he would banish all. For our own part, we should be glad to effect some progress through conservative effort and compromise.

Present conditions are certainly not creditable to a humane people, to say nothing about sanitary considerations.

Smoke and Pneumonia

Dr. William Charles White, pathologist of the United States Public Health Service, finds soft coal smoke in the air to be probably one of the greatest pneumonia factors in American cities. Thus Pittsburgh has the highest constant pneumonia rate of any community in the world. Analyzing the pneumonia death rate of the city by wards, White finds that the denser the smoke content of the air the higher is the pneumonia death rate. It would seem, he thinks, that smoke has a tremendous influence on acute lung diseases.

These are significant findings, in which many communities other than Pittsburgh should now find much to interest them, in view of the increased descent upon many cities of soft coal smoke—and of smoke derived from the burning of oil.

Our Sick Medical Schools

In the course of the recent proceedings of the Council on Medical Education, Medical Licensure and Hospitals of the American Medical Association, some things were said by eminent spokesmen of the profession which suggest that the medical school curriculum problem is in a very bad way.

For example, Dr. William Mayo remarked that "None of us here would pretend to complete knowledge of even one subject, and yet we work our medical students seven days a week to give them a smattering of everything. Many of them, in trying to achieve the impossible, are burned out mentally before they finish school."

Then Dr. Ray Lyman Wilbur said that time was being frittered away in long vacations. "I see," he said, "no reason why the full calendar year, with the exception, perhaps, of a single month, should not be used in actual instruction of students."

Finally came Dr. Charles F. Martin with a denunciation of the present medical curriculum as providing students with easy ways for accumulating credits for the sake of credits. The overcrowded curriculum is leading to superficiality, not to solid acquisition.

It will take some radical surgery to save the student from his present plight, and to promote the cause of medicine itself, in so far as that cause hangs upon the medical education issue.

A Significant Addition to the Curriculum

On page 54 of the 1926-27 Announcement of the Long Island College Hospital medical school appeared the following notification:

SPECIAL LECTURES

MEDICAL LITERATURE AND BIBLIOGRAPHY

A series of lectures will be given to Third and Fourth Year students, during the session of 1926-1927, by Mr. Charles Frankenberger, Librarian of the Medical Society of the County of Kings. The purpose of these lectures is to acquaint medical students with the literature of their profession; to instruct them in the use of the various bibliographic indexes and reference works; to explain the first steps in consulting medical literature.

This course was inaugurated on March 5, 1927. The wonder is that such instruction has never been on the compulsory schedule before. What tool used by the practitioner takes precedence of medical literature? Individual teachers in some of our medical schools have impressed the students with the importance of bibliographical knowledge as a practical necessity, but there have been no regularly established and obligatory courses of this nature. In any civilized community such an important background for professional work is indispensable.

No better choice of an incumbent for this chair could have been made, since Mr. Frankenberger's success in interesting practitioners has already been commented upon in these columns, long before the college decided to utilize his unique equipment for teaching purposes.

Rounds must be made in a library as in a ward; books must be visited as well as bedsides; let the library "clinic" be as much of a reality as that of the hospital; and in the college amphitheatre demonstrate unceasingly the precious properties of our literature as well as of our drugs.

Four-Fifths of Native Children in Africa Declared to Have Dental Defects

A dental examination of the children living in the Kraal native villages of the Transvaal, South Africa, shows that less than 20 per cent of them have teeth free from dental defects, according to the Medical Journal of South Africa.

Much has been written about the effect of civilization upon the physical condition of primitive peoples. New evidence on this subject is presented in a recent issue of *"Public Health,"* the official organ of the Society of Medical Officers of Health (Great Britain), which quotes from the "Medical Journal of South Africa" a report of an examination of the teeth of a large group of Bantu children living in the Kraal native villages in the Transvaal.

A careful examination of 6,179 children of school age living in more or less primitive surroundings showed that less than 20 per cent were free from dental defects. The investigation indicated that there is no great difference between the present-day European child and the pure aboriginal child as regards the incidence of cares in the primary teeth; a slight difference appears in the permanent teeth, the difference being a favor of the aboriginal.

Fully 45 per cent of these South African native children had at least mild physical defects, due chiefly to malnutrition. The physician who made the examinations considers that the presupposition that aboriginal children are less prone to the so-called diseases of civilization rests upon insufficient data.

Miscellany

Eyesight Conservation

"Motion picture theatres are too dark," Guy A. Henry, of New York, General-Director of the Eye Sight Conservation Council of America, declared in a recent interview. "People are unnecessarily subjected to eye strain," he asserted, "in poorly lighted auditoriums."

Investigations reveal that managers of motion picture theatres have no method of determining the effectiveness of the lighting, and experts have urged the framing of a special code of illumination for motion picture auditoriums, following a scientific study of the problem.

"The human eye does not function to its best advantage in the dark or in looking at a fairly well illuminated object when the eye itself is surrounded by darkness," according to Mr. Henry. "There should prevail as high a degree of general illumination as may be consistent with securing clear and easy vision of the picture.

"Too low illumination causes dilation of the pupil to an abnormal degree and provides a coreal area which does not permit of focal accuracy and which tends to distortion of outline. To partially overcome this, segmental action of the ciliary muscle governing the focusing of the eye is induced. Such muscular action can be attained only by great effort.

"There is also strain of the iris muscles resulting from the prolonged dilation of the pupil and another objection is that the varying intensity of the light reflected from the screen requires constant iris action more difficult of accomplishment than under normal dilation.

"There is constant conflict between the extreme darkness surrounding the eye and the light reflected from the screen. Under such a condition the eye is not only more susceptible to the natural varying intensity of the light from the screen, but the adaptability of the eye is lowered and the slightest flicker or movement is more noticeable and detrimental.

"The illumination of the auditorium should be gradually reduced from the rear to the front and all light sources so modified as to prevent glare, especially those which may fall within the spectator's range of vision. A faulty shade leaking a little light in the orchestra or over the organ will be a source of annoying glare for even though the intensity of the reflected light from the screen may be much greater, the direct light by reason of the dark background will by contrast be blinding in effect and harmful to the eye.

"The decorative scheme of the auditorium naturally affects the general illumination. Gilt and silver even in subdued light may produce annoying reflections and, in some instances, these are responsible for an unfortunately low degree of lighting.

"A flock of gilt or silver cupids floating around for decorative effect may produce annoying reflections when the lights are dimmed. Instead of reducing illumination to obscurity it would be better to invest these nude little angels with a coat of dull bronze or to so cover them as to permit of a proper degree of general illumination.

"All surfaces which might produce reflections should be guarded against. Light brackets on walls and chandeliers should be dull finished.

"At intermissions or changes in program when the general illumination is turned on the current should be carefully gauged and the auditorium gradually brought from a state of semi-darkness to full light. A sudden or too rapid turning on of light is not only irritating but may be decidedly harmful to the eye.

"Investigations reveal that managers of motion pictures have no scientific way of determining whether or not the general illumination of the auditorium is what it should be and, in fact, this is governed by the judgment of the management which may take into consideration certain factors and entirely disregard others of equal or greater importance.

"Practical tests and measurements are reported which demonstrate the feasibility of sufficient general illumination of the auditorium during the showing of the film to permit reading of program and this without detracting from definition or causing loss of quality in the picture showing on the screen.

"Valuable studies have been made but, unfortunately, are not followed or in general practice in motion picture theatres. One such report states: "By proper distribution of the light, the general illumination of the interior of a motion picture theatre may be raised to a considerable extent above the values in common use without causing any appreciable loss of quality in the projected picture."

"A scientific study should be made of this problem and standards of illumination established for the guidance of the managers so that they may be sure that a matter so important as the general illumination of the theatre during the showing of the picture is scientifically correct and that the eyes of their patrons are not being subjected to strain.

"In fact there should be developed a special code of illumination for motion picture auditoriums that will cover a field which is too important to be left to the judgment of individuals."

Sanatoria Universities in Switzerland

ETHEL HUGLI-CAMP

At sunny Leysin, in the Valais, which together with Davos and Arosa in the Grisons is world-famous for its tuberculosis cures, a sanatorium university—founded in 1922—stretches out a helping hand to those who, in the midst of their studies, are attacked by the dreaded White Plague.

The University Sanatorium at Leysin is situated somewhat below the station at a point where a splendid view of the Valley of the Rhone spreads out far below, and the dazzling glory of the Dent du Midi is ever in evidence. From the outside the institution with its full complement of sunny sleeping porches seems to differ in no respect at all from the countless other sanatoria in the place. But no sooner does one enter the building, with its comfortable rooms overflowing with books, than one feels the atmosphere of intellectuality and knows that he is in the midst of a colony of brainworkers. And anyone who, like the present writer, has been lucky enough to spend a few days within the colony and observe the life of the students and the devoted activities of the Head has certainly been struck by the valorous spirit which pervades the whole place.

Taking a cure at Leysin means thoroughness and care in carrying out the doctors' orders, but with all these orders conscientiously observed the student-patient is never entirely separated from his studies nor is he allowed too much leisure in which to brood over his illness or waste his time in superficial social activities. His coworkers are students from universities all over the world. Beginning with Switzerland, there are students from the German-speaking as well as French-speaking regions, and among the foreigners there are two Frenchmen, a German, an Englishman and a Japanese. Thus the international character of the institution is coming forward with gratifying results. The best kind of a spirit prevails among all these young people and it has been observed that this daily contact of patients pursuing their studies

under these unique conditions tends to give them a far deeper conception of their subjects than they would otherwise have, and opens up horizons which would ordinarily have been closed to them. In addition, this life of regular study is considered as one of the most important factors in effecting cures among the patients. Some of them are writing their theses—others have passed examinations sent them by their universities. Regular professors lecture from time to time and special arrangements are made for the student to keep in contact with everything touching the life of his alma mater. Students who cannot attend lectures have private instruction.

In Leysin everything possible is done to keep the student from regarding his forced stay in the Alps as lost time, and make him feel, on the contrary, that the wise use of his time in following out his curriculum is going to help him to get well all the quicker. The result is that many can now look back on their stay in the Leysin University Sanatorium with the greatest gratitude as having formed a period of unusually rich cultural development in their lives. Dr. Vauthier, the Head of the Institution, deserves especial praise, for, in his relations to his patients, he is not only their physician but also their friend and counsellor, and, in many cases, their teacher as well.

What Leysin has done in curing and in encouraging students whose health has broken down just at the moment when they most needed their strength, will probably be done in time also at Arosa and Davos. It is impossible to exaggerate the immense importance of these opportunities offered by Switzerland to the youth of the world—the leaders of tomorrow—to go on with their studies while getting back their health, a thing unheard of but a very short while ago when many a brilliant young student, finding himself attacked by tuberculosis, was obliged to renounce all idea of further work and drop into the rôle of invalid.

Correspondence

A Dry Protest

To the Editor of THE MEDICAL TIMES:

In a recent number of THE TIMES, I noticed that space was given to an address by Brigadier General Ransom K. Gillette. At one time, Col. Gillette undertook to line the American Legion of New York State up against prohibition. The principal argument featured was that Col. Gillette had been wounded in France.

This attempt to capitalize a wound, honorably received, to help put across a program in the interest of booze and nullification, shows the callousness of the wet element. In my humble opinion, Col. Gillette served his country much more creditably in France, than he has since, in N. Y. State.

In the discussion of this address, reference was made to the attempted organization of the physicians by Drs. Lambert and Copeland, to be euphoniously and laboriously called, "The Organization for the Protection of Constitutional Rights". The purpose was to remove any limit on the amount of liquor which a doctor might prescribe. There is no denying the fact that many hotels harbor a doctor, so called, for the purpose of "prescribing" liquor. The principal and most effective argument against the 18th Amendment, is that "it can not be enforced." The purpose of this organization therefore, was simply to bore a bigger hole in the Volstead act.

I have been in general practice thirty-six years. In common with every other practitioner of medicine, I have had ample opportunity to see the baneful effects of drink; and no other profession has suffered more, financially, from it, than have we.

Personally, I consider an address by General Gillette on the booze question, entirely out of place in a medical journal, and an attempt to drag the medical profession into this disgraceful business of nullifying the constitution, by contributing to the encouragement of its violation, a gross insult to the profession.

FREDERICK J. BOWEN, M.D.

Mount Morris, N. Y.

Diagnosis and Treatment

Tuberculous Adenitis Treated by Radium

Philip Goose, of London, believes that although radium as a therapeutic agent is generally associated with the treatment of cancer, it can be of great use in the treatment of several forms of non-malignant disease. One of these—tuberculous disease of the lymphatic glands—responds very satisfactorily to irradiation with radium plates, and the following series of 50 cases treated at the Radium Institute, London, appears to be worthy of analysis and record.

From a study of the notes of these cases certain facts emerge. In many instances there was but little benefit noticed after the first application of radium, but definite improvement became apparent after the second. Various forms of screening and different lengths of application were tried in the early stages, but it was soon observed that the best effects were to be expected when the treatment was carried out in a long exposure with heavily screened apparatus, given during a 48 hours' stay as an in-patient, although good results were obtained when the patient was treated as an out-patient, with three or four daily sittings of six hours' each, making a total of 18 or 24 hours' exposure. If after a long exposure a second treatment were given, an interval of at least six weeks should be allowed to elapse between the two exposures to radium.

SELECTION OF CASES AND DIAGNOSIS

The cases reported upon here were of all ages, from a few months to comparatively old age. The cases of children did best, but improvement is to be looked for at any age. Those patients who had received previous *x*-ray treatment did not respond to radium so quickly as those who had not.

In most of these cases the question of the removal of the glands by operation had been discussed; and the various reasons for negativing surgical means were as follows: (1) The general physical condition of the patient. (2) Previous operation had been performed but disease had recurred. (3) The objection on the part of the patient, or the parents, to what they believe to be the danger of the operation, but much more commonly to the fear of disfiguring scars remaining in the child's neck afterwards. (4) In the more recent cases the doctor in charge of the case, having had good results in previous cases with radium, preferred to resort to that line of treatment from the first. (5) The operation for removal of tuberculous glands by surgery is now but seldom done.

Every doctor who has sent a case of tuberculous adenitis to be treated here has been written to, and asked for information as to the present condition of his patient, and whenever possible the patient has been re-examined at the Institute. In not a few of these cases which had been previously operated upon, besides the enlargement of the glands, disfigurement and even deformity were present, owing to keloidal changes in the scars. It is satisfactory to note that the same radium application given for the glands will at the same time reduce these keloid scars. When a patient comes for radium treatment, and on examination a swelling is found which contains fluid, this is first removed by aspiration. In those cases where there is a sinus leading down to one or more broken-down, discharging glands, treatment by radium is by no means contra-indicated. In fact, in most of the cases of this kind treated by radium the sinus has rapidly dried up and closed.

Although the diagnosis of tuberculous adenitis was made in a few cases from microscopical examination of gland tissue removed by operation, in most of them the diagnosis was arrived at by the clinical history and physical examination. It is to be noted that where a mass of glands diagnosed as tuberculous suddenly and almost completely disappears within a week or ten days of the first radium application, the case is probably not tuberculous, but proves later on to be lymphadenoma.

It is interesting in going over the notes of these cases to observe how on not a few occasions enlargement of the glands of the neck was first noticed some few weeks after the tonsils had been surgically removed. What the significance of this is, whether merely coincidence, or whether, owing to the removal of the tonsil, bovine tubercle bacilli have gained access through the bed of the tonsil, it is difficult to say, nor is it strictly concerned with the subject under discussion.

TECHNIQUE AND RESULTS

The technique itself is simple. The glands to be treated, having been carefully located and palpated, are marked out on the overlying skin with a dermographic pencil. Over these localities "half-strength" plates—i.e., plates covered by 2.5 mg. radium element to each 1 sq. cm. surface, and covered by a sheet